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PUBLISHED BY JAMES VICK, ROCHESTER, N.Y.

J. WALTON. DEL. EGOLING SC.

TURNIPS FOR FEEDING.

The Ruta Baga or Swede Turnips may be sown in May, or up to middle of June. The Common or English Turnips may be sown any time between the 25th of July and the 15th of August. Two pounds to the acre, in drills. I will send at the following prices, and pay all express charges or postage. Large quantities, by freight or express, we can furnish at special prices:

ENGLISH TURNIPS.

Turnip, Early White Flat Dutch, size medium; grows quick; lb. 75 cts.; oz., 10 cents, 5

Early Yellow Dutch, one of the best for the garden; per lb., 75 cts.; per oz., 10 cents, . . 5

White Norfolk, a popular variety for feeding; per lb., 75 cts.; per oz., 10 cents, ... 5

Strap-Leaved White-Top, roundish, of medium size; one of the best, either for market or family use; per lb., 75 cts.; per oz., 10 cents, . 5

Strap-Leaved Red-Top, similar to above, purple above ground; per lb., 75 cts.; per oz., 10c. 5

Turnip, Early White Stone, a good, globe-shaped Turnip; per lb., 75 cts.; per oz., 10 cents, . 5

Early Yellow Stone, similar to above, except in color; per lb., 75 cts.; per oz., 10 cents, . . 5

Early White Six Weeks, or Snow Ball, very early and fine; per lb., 75 cts.; per oz., 10 cts., 5

White Globe, large, white; fine for field culture; per lb., 75 cents; per oz., 10 cents, . . . 5

Yellow Globe, an excellent smooth, yellow, round Turnip, of large size; known in some places as Golden Ball; lb. 75 cents; oz. 10 cts., 5

Orange Jelly, a very beautiful yellow Turnip; one of the very best yellows for the table; per lb., 75 cents; per oz., 10 cents, ... 5

Long Red Tankard, good and productive for field crop, per lb., 75 cts.; per oz., 10 cts., . . 5

Green-Top Yellow Aberdeen, excellent, per lb., 75 cents: per oz., 10 cents, ... 5

Yellow Malta, fine, rather small, very smooth; per lb., $1.00; per oz., 10 cents, ... 5

Jersey Navet, a new, delicate, white Turnip, long, somewhat like the Parsnip in form; one of the best for the table, very sweet; per lb., $1.00; per oz., 10 cents, ... 5

Teltow, a well-known German variety; flesh white, firm, sweet and of excellent flavor; per lb., 75 cents; oz., 10c., ... 5

Sweet German This celebrated Turnip is white, sweet, a long-keeper, and generally solid until mid-summer. It should be sown as early as the Swedes; per lb. 75 cents; per oz. 10 cts., 5

RUTA-BAGA, OR SWEDE TURNIPS.

Ruta Baga, White Sweet, a large, white, solid Swede, sometimes called White Russian; per lb., 75 cents; per oz., 10c., ... 5

Green-Top, a round, solid, sweet variety, very productive; per lb., 75 cents; per oz. 10 cents, 5

Laing's Pruple-Top, an old and favorite variety, good keeper, solid and productive; per lb., 75 cents; per oz., 10 cents, ... 5

Carter's Imperial Purple-Top, claimed to be the best Purple-top grown; very hardy; per lb., 75 cents; per oz., 10 cents, ... 5

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Of all sizes and kinds for potting flowers for winter. Also Pot Covers Flower Stands, &c. Just what will be needed the coming Summer. Send for Catalogue.

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WORN DURING SLEEP

or at any time, as the wearer may elect. Eminent Medical Experts and Chemists, who have analyzed the MASK, pronounce it perfectly pure and harmless, and admirably adapted for the purpose intended.

Its action is truly **Marvelous;** and it proves at once Durable, Cleanly, Comfortable, Easy to Apply, and will save its possessor hundreds of dollars, uselessly expended for Cosmetics, Lotions, and like preparations.

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PRICE. — *On paper, sized and varnished,* postage paid, 50 cents each. The whole collection of *eight* for $3.50, or any eight ordered.

On Cloth and Stretcher, just like an oil painting, ready for the frame, $1.50 each, postage or express charges paid by us. The collection on stretchers, at $9.00., or any eight chosen.

Framed in Black Walnut and Gilt, and very neat, $2.75 each. No charge for boxing or shipping, but those ordering must pay the freight. The whole eight, framed, $20.00, or any eight selected.

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AUGUST, 1879.

THE RAPIDITY with which dust accumulates in unfrequented places and upon articles seldom used is something remarkable. Books in demand for referenee are always clean, while those that lie quietly upon the shelves seem to attract all the dust in the room. To have out-of-the way places in the garden free from old pots and rubbish requires a constant effort, while the lawn and flower-beds seem almost to keep themselves neat. The parlor and sitting-room behave very well, but the closets show a determination to get out of order, and catch and hold everything, that is quite wonderful. The cellar, however, exhibits the greatest perversity, and its untold accumulations in variety almost equal that of a boy's pocket. This strange and useless collection we need not enumerate, as each one can see and know for himself by taking a look at the regions below.

Several of our correspondents have reminded us of a promise, made in an article on health and ventilation, to speak of cellars in a future number, and it is a subject of the first importance, as our houses are now constructed. In the olden time, when open fire-places were common, affording plenty of ventilation, and doors and windows were somewhat rudely constructed, so as to admit fresh air freely, and thus aid in the good work, poorly constructed and undrained cellars were not so great an evil as at present. Now, our houses are better made, so as to exclude outside air as much as possible; the ventilating fire-place is gone, and the only chance for the escape of foul air is by means of the smallest possible aperature in an air-tight stove. Even this slight relief is denied where a furnace is used, and to make the matter worse, much of the heated air supplied by furnaces comes from the cellar, through design, or badly constructed cold-air pipes. It is, therefore, not only important, but absolutely necessary, for those who would live and enjoy life, that the air in the cellar should be pure.

Many of our readers will recollect the time when it was usual to warm only one or two rooms—the sitting-room and kitchen, and occasionally the parlor. All slept in cool rooms, the ladies did much of their work in cool rooms, and the halls were cold. Now, in most houses, every room and hall is warmed more or less, and often quite up to summer heat. It has been suggested that this mode of living tends to lessen the constitutional power to resist malarial influences. Cold is a good tonic, as those know who, being debilitated by long residence in a warm country, are compelled to seek a cooler clime for restoration. Our friends may not all assent to this idea, but they certainly will agree that the cellar should be clean and its air pure.

The cellar should be used only for the purposes for which it was originally designed, and never be permitted to become a general store-house for articles not otherwise provided with a

resting place. Nor should it be used as a root-cellar. These may be stored in the cellar of some out-building, or one made for the purpose. Not that a few vegetables allowed to remain in the cellar some days would be injurious, but a large quantity, for a winter's supply, would be quite objectionable, particularly if allowed to remain late in the spring, as is too often the case.

Provision should be made for carrying water from the cellar, and all drainage from the house, effectually and rapidly. All drain pipes that pass through the cellar should be of iron, with joints well packed, to prevent leakage, but all such pipes should be outside of the house whenever possible. Most cellars are naturally more or less damp, thus it is necessary to connect them directly with some drain, and, unless well guarded by good traps, the sewer gas will escape from the drain to the cellar, and infect the whole house. Even the best traps sometimes prove defective, and occasionally get out of order. To guard against this, and secure perfect safety, after connecting the sewer with the lowest part of the cellar, we would place on its bottom six inches or more of rough stones, putting a few smaller on top, to make a tolerably smooth surface. Give to this a good coating of cement, so stiff that it will form a good coating on the top. Thus the stony bottom furnishes good drainage, while the cement, in case of any leakage of gas, prevents its entering the cellar. If, in addition to this, a proper flue is connected with each chimney, such a cellar will be as perfect as it is possible for one to be made, with our present knowledge.

The best constructed cellar, however, will require ventilation, and, in the winter, as much air should be admitted as can be without danger of freezing; during the summer there should be an abundant circulation. All windows, therefore, should be provided with wire screens, or cats, and perhaps worse animals, are apt to cause annoyance. A coat of lime-wash occasionally will add much to the appearance of the rooms, and may prevent the accumulation of insects.

After all that is done, or can be done, in an ordinary underground cellar, there is a cool dampness, that is not pleasant, at least, and no more time should be spent in it than is necessary. Of course, if the earth is removed from the walls for a few feet all around, and what are termed airy-ways, formed, this objection is, in a great measure, removed. We would not have sleeping rooms, especially for children, on the first floor. Bed-rooms, as far as possible, should be as high as we can conveniently get them.

THE SCHOOL GARDEN.

The rearing of trees, plants and flowers—the tending of a garden—the cultivation of the soil, are attested by the wisest, the greatest and the best of our race, as pursuits not only innocent, healthful and interesting, but ennobling and elevating to the mind, and from which proceeds a quiet but positive and powerful force in regulating and refining the affections, moulding the habits and forming the character of the child and the maturing man. These influences so clearly traced and defined are operative upon the young child whose features light up with pleasure at the sight of bright flowers, and who snuffs with a keen sense of enjoyment the delicate odors they exhale. With proper training, the pleasures the child thus receives affect and develop his thoughts, and, by strong, though subtle ties, bind the expanding intellect to the world of nature, and gradually directs it, at length, to the careful study of those laws that are all-pervading, and by which we are able to some extent to understand the design and the will of Him who "causeth the grass to grow for the cattle, and the herb for the service of man: that he may bring forth food out of the earth."

Some of the best teachers and educators have asked the question, "Why should not the garden in some form be attached to all of our children's schools?" And already the qustion has been answered by their establishment in some parts of Europe with the most happy effects.

Who of us does not remember the pleasure experienced in our first youthful efforts in a garden? An interesting writer in an English journal says upon the subject of

CHILDREN'S GARDENS,

"There is a period in the life of every boy and girl when they feel a desire to have a garden to plant and cultivate with their own hands. This desire may assume various shapes, according to the nature and disposition of the child, and with some, perhaps, may only be of a fleeting character. But, making every allowance for the fickleness of youth, enough of sterling, thoughtful material remains to produce, if properly utilized, an influence for good, not only on their own lives, but also on all with whom they may come in contact. Gardening, or the cultivation of plants and flowers, will not act on all alike, neither will its benefits be conferred upon all in the same degree; but I am convinced, from early experience, and what has come under my observation since, that if, during a boy or girl's early life, a love of gardening were en-

couraged, it would develop into one of their greatest pleasures. In the same way as the trained eye can see in works of art, such as paintings, and sculptures, beauties that are hidden from the untrained, so also the man or woman who has in early life learned to know and love plants and flowers will derive more refined and lasting pleasure from the frequent changes that nature is continually spreading out before them than they otherwise would do. Give young people but a yard or two of ground to cultivate in some shady corner and they will be contented. What if they do frequently transplant the Primroses and Daisies which they bring in from the banks and hedgerows in accordance with their changeable whims and fancies? They are gaining knowledge; they are learning something of the mysterious workings of nature, the study of which never cloys or wearies.

"One of the most interesting children's gardens which I have ever seen was situated in a dingle or dell, and would now, I suppose, be called a wild garden. Though the period to which I am referring is something over twenty years ago, yet the scene rises before me as vividly as if it were but yesterday. It had thickets of Thorn and Birch, where the nightingales sang and reared their young. Open, sunny spots were there, too, where many rare kinds of indigenous plants flourished, and around which lingered many pleasant associations. There were shady spots for Ferns and other shade-loving plants, and banks whereon the wild Thyme grew, emitting when brushed by the feet a pleasant odor. Where the shade was dense the ground was carpeted with the brightest, freshest Moss, and, to make the situation absolutely perfect, a babbling brook meandered through the valley, overhung in places with Brambles and Willows, its course being occasionally broken by piled-up boulders or other impediments, that gave louder voice to its music and buoyant life to a most charming spot.

"Many of our wild flowers are as beautiful as expensive exotics. What banks of Primroses, Violets, Bluebells, and Lily of the Valley might be had! and the hardy species of Geraniums are quite as interesting, if not quite so showy, as the glaring-colored Pelargoniums common to the parterre. What a sight masses of Snowdrops, Aconites, and Wood Anemones would present early in the year! When left long in one position they become naturalized and flower all the better for it. In an article of this kind one cannot notice a fifth part of the beautiful wild flowers that might find a congenial home in such a garden, nor yet set forth the interest which the collecting and bringing home the plants would excite in the minds of the young. How easily, too, and pleasantly might a competent teacher, under such circumstances, incite a desire for and afterwards instil into the youthful mind a knowledge of the science of botany. Such a garden would annually grow in interest from the additions made to it, both in plants and seeds, until not only children, but older people might be seen wending their way in the direction of the children's garden. There must be a good dry path leading to it and through it, and it must be so laid out as to embrace the prettiest spots and views.

"The foregoing sketch only illustrates one phase of gardening for children, but there are many others which can now be only glanced at. The bold, resolute boy, desirous of acquiring distinction as a cultivator, might be indulged with a plot of ground in some conspicuous portion, where a feeling of pride would impel him to be energetic and industrious. In this way the dispositions and impulses of children might be directed into a good channel, and even their very failings drawn upon to strengthen their moral nature."

In a little work called

THE SCHOOL GARDEN,

written by Prof. ERASMUS SCHWAB, of Vienna, and to which attention has already been called in our columns, some of the principal ideas and methods in the operation of these gardens are given. To what extent and in what manner the school garden will be made a part of our public and private school training is an unsolved and even untried problem, but that it is an idea sure to be developed and engrafted upon our system of education there can be but little doubt when one knows how welcome the thought is to children, parents and teachers. We can in no way better give to our readers the general thoughts upon this subject than to quote leading paragraphs from the pages of the manual before us. To all in any way interested, but especially all teachers and educators, we can recommend the careful perusal of the book.

"The degree of carefulness which a community applies to the education of youth, and consequently to its public schools, is the surest measure of the moral and spiritual standpoint and the political ripeness of the people. The public school, as the planting ground of the welfare of the nation, must therefore be the darling of the community. That it is already so where the task of the school has been recognized by the people, is expressed by the school-building itself. In every village where it is the pride of the villagers, it is the most beautiful and convenient house in it.

"The school house, like the church, must be a 'sacred' place; but it can only be so when it has a suitable location and surroundings. It should have an agreeable, well-cared-for approach, a worthy exterior and a convenient interior united; and when space and neatness, and an abundance of light and air are added, it will be made the dearest resort of youth.

"Great and difficult in our day is the task of the public school. The requisition is to educate well-instructed, thinking men; minds prepared for the exigencies of life; self-governing men, possessing sentiments of duty and honor, love of their fellow-men, and the power of self-sacrifice—in short, characters useful to the community.

"How can the school reach this ideal?

"Is not every patriot, every friend of youth and man in duty bound to think what are the means by which the public school, whether in city or country, shall reach its goal of broadening the culture of the people in a manner worthy of human destiny?

"There is a key to the solution of this problem, and it is found essentially in a just estimate of the value of instruction in natural science. ROSSMUSSLER expresses himself thus: 'Mother Earth, with her materials, powers, phenomena and forms of life is to us what we call nature. This nature is our home, to be a stranger to which brings disgrace and injury to us all. In this conception, nature is the groundwork of human culture and morals. In these words, in my view, lies the central point of human instruction.'

"The shortest, nearest path to this goal is the establishment of school gardens suited to time and place. In the school garden may be comprised far more than half of the instruction in natural history and science, and specially an essential part of the science of the home region.

"That this use of natural history for educational purposes may and must be begun in school gardens, it is the design of the following pages to show. A proper school garden may, must, and is destined to be the place where children are happiest; it must be the dearest spot in those hours which they do not spend in the school room or occupy at home in work for the school. To be shut out from the instruction and plays of the school garden will necessarily be one of the most painful punishments to the child. The school room (and also the little school workshop) and the school garden are to be the whole world of the child when this is not furnished by family life; I mean the world of feeling and intellect, the world of his thoughts, of his childish strivings, his dreams of future activity. The eye and heart of the child shall open here to the beauty of nature, from the lowest steps of learning, and at the tenderest age; the attention will be first powerfully excited and fastened here; the sense of poetical harmony and the intuition of beauty must here fall, fertilizing, upon the young, soft soul.

"Will not the life-long effects of the pleasures enjoyed in the beauty of creation, and in the improvement gained in the school garden, express themselves in the character? Surely a new race will thus issue from the schools, a race which will not look upon the earth as a vale of tears, but as a place worthy of human industry, a beloved, habitable home, in which the man of clear mind and joyous heart shall strive and work for his own and his neighbor's happiness.

"Will not intellectual minds and moral qualities be developed delightfully by rational school gardens?

"No one who knows the world and men will fail to see that these incitements which are destined to determine the activity of men for their whole lifetime, are the most effectual for individuals as well as for the whole race, if they are brought to bear upon the naive, freshly receptive age of from six to fourteen years. The understanding seizes them in play, the fancy receives them gladly as material and nourishment for future activity; enjoyment soon lays the foundation for persistent pursuit and love of them, and for future salutary use of them. The lasting influence of such youthful impressions received under judicious guidance and in the right way, is incalculable.

"No intelligent man would make an agricultural school out of the village school, and thereby deprive the public school of its peculiar character; but is it rare for men to feel that they have not estimated highly enough the incentives received in early youth for industrial and technical activity?

"Very special care should be bestowed upon fruit culture in the school gardens. This is as yet too little esteemed as a source of agricultural prosperity. The school garden can further this interest by cultivating valuable fruits, raising them from seed and thus acclimating foreign fruit—making every region a fruit-growing one.

"The school garden, while attending to what is necessary and useful, must be sure not to neglect what is beautiful and pleasant for the children, and must not fail to provide beautiful flowers by which the sense of color shall be awakened in them. The culture of flowers must be looked upon as instructive, educational and moral in its effect. Where the school garden is necessarily too small for other things, only flowers must be raised. The point to be

aimed at is that the children shall love their work. The incentive to gardening will be still more powerful, if ornamental shrubs are included, which may be planted singly or united in a pretty shrubbery. Where there is water in a school garden, or very near it, interesting water plants must not be forgotten. The influence of the school garden will increase just in proportion as the knowledge of our home plants, and those that can be made home plants by being acclimated, is extended.

"A school garden in the city fills the hearts of the children, even of those who can only see it out of the windows, with transport, and makes them frequent it so much the more willingly. One need but see what joy they have in only a few trees in front of the school-house or standing in the yard, or when the walls of the yard or the gymnastic ground are ornamented with perennial green, or with shrubs in the corners, or when large flower pots filled with blooming plants stand around on pyramidal flower stands. Whoever has once learnt in the school garden to love trees, will ever after feel it to be an imperative want to plant and beautify.

"The way will be well opened for future school gardens when in all the recitation rooms pots of leaf plants and flowers will be found, which do well in moist rooms inhabited by many people, and when all the windows of the school-houses, so far as they do not too much impede the sunshine, are adorned with flowering plants. Cords, or, still better, fine wires must be used to fasten up the flower pots safely. Children will be glad to bring plants from home, to exchange them again for others when they are out of bloom, and carry home in the autumn what must be kept there through the winter.

"It is not difficult to take the idea, if one is once convinced of the necessity of school gardens, that a school garden for girls must be arranged differently in some respects from one made for boys. Both boys and girls should learn what belongs in a pleasant home garden; the boys should learn to know the wild shrubs and all the important technical and commercial plants, and how to plant and improve trees and take care of trellis fruit.

"Let every one answer for himself the question: Will not the habitual frequenting of the city children in the school gardens, and where it is practicable, their operation in them, in light garden work, tend to create a physically powerful race of men?

"Many friends of schools will perhaps consider it very difficult, indeed quite impossible, to carry into effect the ideas thus far developed for the realization of a beautiful and theoretically incontestable ideal, and will look upon it as a mere pious wish. And this for two reasons. First, because they think the teachers are not to be found who possess the exalted gifts of the teaching required for it, and also because the communities would not be likely to have the means, or the insight, or at least the spirit of self-sacrifice to carry out and support such school gardens.

"Neither of these things is to be feared. In regard to the teachers, it is not asked of them that they shall be learned men, or at least so exceedingly learned as to be able to know and determine every plant, every animal, or every mineral at sight.

"But as the state has in its hands the teachers' seminaries, it is its business to see that the teachers are accomplished in this direction. It emphatically belongs to every teachers' seminseminary to have a carefully planned, richly endowed school garden. Austria has already set the example showing that such a garden can be established at cost of a few thousand florins.

"The expense of these schemes is by no means so large as one at a distance imagines, as soon as a suitable, not too small territory is to be had. The work upon the land is often done by the citizens who offer their services for handling and digging without price; and the more readily, because the first work is best done late in the autumn when the farmers have free time to give to it. The space to be taken for the garden offers no special difficulties. Every reader of this essay must see for himself that in most cases the school garden, like the coat in the hands of the tailor, must be cut according to the cloth.

"In the country school garden, the central point is constituted by the 'experiment garden for boys,' and the kitchen garden and nursery, which divide the territory into two equal parts.

"The large country school garden requires the beauty of landscape gardening. In Galizia, through the influence of the author, school gardens have a park-like character, and only the garden-land proper is limited by straight lines. But in small school gardens, the ground must be used as far as possible for agricultural purposes. The paths in small school gardens will therefore be narrow and straight. The more valuable fruit trees cannot be in great numbers; and wall-fruit and grape vines must be left out, as these do not belong to the first essential instruction of the garden. In the school garden of the large city, the 'experiment garden' must be dispensed with. But the gymnastic and playground must be in or near the garden. The garden work and movement in the fresh air are, in a sanitary point of view, inestimable to city children.

"He who has been happy for eight years of

his childhood in a rational school garden will be thankful all his life for this paradise of his first years, and will be earnest to contribute his own mite to the constant perfecting of an institution that has become so dear to him."

LANCIFOLIUM LILY. RUBRUM.

Although in previous numbers we have given several articles describing the different varieties of Lilies and their culture, we could not resist the temptation, now that our beds are becoming so brilliant with flowers, to present our readers with a colored plate of one of the hardiest and best of the whole family, *Lancifolium rubrum*. Well do we recollect the first time we beheld this flower, soon after its importation from Japan, and the sensation which its advent created in the floral world. It was then thought to be tender, and was grown in greenhouses, and it was with a good deal of doubt and very

PLANT AND FLOWER.

little faith that we permitted a plant or two to take the chances of a winter in the garden. In the spring, on removing the covering of coarse manure, which we had used as a slight protection, our surprise and pleasure was great on finding the strong, noble shoots had made several inches of growth above the surface of the ground. During the summer, these out-door plants far exceeded in strength and beauty those raised in the houses. From that time forward we have grown many thousands of these Lilies, and in every case with the greatest satisfaction and success.

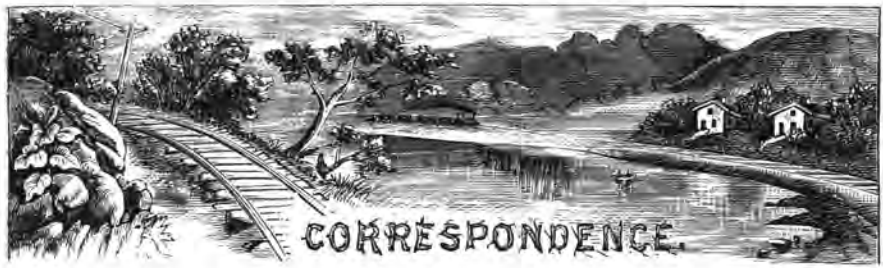
Planted in the autumn or spring, in a fairly drained soil, four or five inches in depth, they need no other care than to keep the soil free from weeds, until autumn, when a covering of coarse manure, for a winter dressing, will be of advantage in protecting the ground from the frequent freezings and thawings of early spring, which are more severe on all bulbs and tubers than very severe, steady freezing.

BULB AND PLANT.

The flowers differ somewhat in the intensity of the coloring, and some florists advertise those that are somewhat lighter in color than the one shown in our frontispiece, as Roseum, but the truth is, they vary considerable in different seasons and situations, and sometimes even the light and dark will be seen on the same plant. This distinction has, therefore, been generally abandoned. There are, however, several other distinct varieties, the best of which are *Album*, white; *Punctatum*, white with pink spots, and *Præcox*, new large white, with sometimes a pink blush.

The bulbs of this Lily are formed of long, narrow fleshy scales, and are from two to three inches in diameter at the base. The natural increase is by division of the bulb. When it becomes large, it divides into two parts, and from an old plant will be seen several flowering-stems, showing that this division has taken place. Any time after flowering these bulbs can be taken up and planted separate. Small bulbs are also found at the base of the flowering stem, and these may be removed and planted as they are, adhering to the stem. It is not best to separate them from the stem the first year. When florists wish to increase their stock rapidly, they often take the ripened scales and sow them in drills, or beds, like Peas. Small bulbs are then formed at the base of the scales, as shown in the engraving. The bulbs thus formed will, after a few years of careful culture, become large enough for sale.

SCALE.



FLOWER-CULTURE IN OREGON.

I have been sitting on the porch enjoying the sight and fragrance of my flower-garden, the pranks of the buzzing humming-birds, the singing of innumerable other birds, whose names are unknown to me, and the questions of my boy and girl, as they gather bouquets to carry to school, and last, but not least, the reading of the ever delightful VICK'S MAGAZINE. It is pleasantly instructive, and gives the very information desired. The frank interchange of experiences and opinions form one of its chief attractions. I am glad to see that correspondents are calling attention to the merits of their particular favorites, and more so when they begin to extol some of those for which I have long entertained a decided fancy. "M. E. L.," in the June number, will please accept my thanks for her good words for the Antirrhinum. I am glad to see this very deserving flower get a little of the praise it so justly merits. Said a lady to me one day when looking at my flowers, "Oh, the Snapdragons are so common and old-fashioned I wouldn't have them!" What an idea, just as if good things could be too common! For my part, "I stand firm by the flowers of my childhood," and the old-fashioned Marigolds, Sweet Peas and Hollyhocks, are welcomed with as much pleasure each returning season as any of the newer or more fashionable sorts, and I should consider my garden sadly deficient without them. Here, the Antirrhinum is one of the most hardy, profuse and long-continued blooming perennials that we have; the seeds volunteer almost like weeds. We have one beautiful one, which has double and treble spikes, giving the appearance of very large clusters, rather than spikes. Another has reached the height of four feet five inches, and is still growing.

The Sweet Rocket is another very hardy and deliciously fragrant perennial which deserves more praise than I ever knew it to get, except from myself—I try to do it justice sometimes. We have one four feet five inches high, and plenty more very nearly that.

Last spring we planted seeds of double white Hollyhock. They have had no special care, nor the best chances, and yet one of the plants has now reached the height of five feet three inches, with leaves five feet five inches in circumference, measuring around the points and notches, beginning at the stem, and the flower-spike is just starting up. I wonder how long the spike will get to be!

The Corn-flower, or Bachelor's Button, you speak of as being the national flower of Germany, I think, by the description in the catalogue, is the French Pink, which, though beautiful and fragrant, has become almost, or quite, as much of a nuisance here in wheat fields as Wild Oats, and, on that account, is denied a place in flower gardens.

Some have extolled the Whitlavia, but I have found it so disgustingly sticky to the touch as to almost destroy its otherwise good character with me.

I was amused at that blue-rose fraud in Kansas; isn't it wonderful how people love to be humbugged.

I have derived untold pleasure from flower-culture, and, though making many failures, and having almost concluded that I shall have to give up some very desirable sorts, yet, as VICK says, none of us can have all the good things at once, and while I can have such splendid Dicentras, Wallflowers, Sweet Williams, Satin-plants, Daisies, English Ivy, Honeysuckles, and many other good things, perhaps I ought to be satisfied.

I enclose a specimen for name. It is called Catnip Moss, though I fail to see why it should be called moss. The leaves look just like Catnip, only they have a white stripe through the middle. It grows about eighteen inches high, has spikes of curious-shaped deep pink flowers, with small, white specks, and begins to bloom early in spring, remaining in bloom nearly all summer; it has a rather faint, disagreeable smell, but is one of the most desirable hardy perennial plants I have found. I think it does best in a shady place, but have not tried it in

the sun. I cannot find a description of it, and very much wish to know its proper name.—MRS. E. B., *Sheridan, Oregon.*

The plant of which specimen was received is *Lamium maculatum*, or Dead Nettle, a free-growing and free-blooming Labiate plant.

The hard winter is over and summer has come at last; nature's drapery is in full show on hill and in vale, the Robin is singing his morning and evening hymns, and our gardens are robed in their summer attire. *Fenzlia dianthifolia* displays beautiful beds of its own making, among rugged rocks as well as dried bushes, under green-growing trees and old, rotten logs—every place seems to be its natural home.

The garden Peas I bought last winter are the grandest thing I ever saw in the line of Peas; an acre of such Peas would be worth a a thousand dollars in this country.

My last Calla bloom was seven by nine inches in size. Let us hear from your Calla growers.

Some one says that Sweet Rocket will grow eighteen inches with fair culture, but mine reaches clear up under my arms. The Pansies have been one mass of bloom from the middle of March, and they are still keeping up their splendid show of bright faces, saying, "You look at us; we look at you!" All the Hyacinth bulblets that formed last year in my garden, sent up a spike of flowers this last spring—I mean each one had its own spike. Having no luck with the fringed Petunias, I wish to know if they want different treatment in starting than other Petunias. The information may be useful to others as well as myself.

We have tried coal-oil for moles this season. The result is, they leave the spot for a day or two and then come back and do their work of destruction as bad as ever.

The Queen Victoria Gladiolus quite disappoints me this year. Last year it sent up such majestic spikes of flowers, but this year it is coming out of the ground in four stalks, and looks wretched. The ants have ruined all my Pæony buds. I have tried olive oil, but they pay no attention to it; some nests I have found by hunting, to these I applied pots of boiling water.—ANTHOMANIA, *Althouse, Oregon.*

The fringed Petunia, like all of the large-flowered kind, does not germinate very readily. The seeds are fine, and do not possess much vitality. You should have taken up the Gladiolus bulbs and reset them. Perhaps there are several bulbs crowding each other, or some mole or other enemy may have injured the bulbs.

MIGNONETTE FOR BEES.—Mr. JOHNSON, of St. George, Utah, writes to the *Rural New-Yorker* that a well cultivated acre of Mignonette will give food to 500 colonies of bees.

THE GODETIA.

MR. VICK:—I do not remember having seen one word in your MAGAZINE about the Godetias. I think they are an excellent family of flowers, and, therefore, have cultivated them for a good many years. They form a mass, like the Petunia, and keep in flower a long time, and I do not know of many plants that will give so many flowers for the size of the plant.

GODETIA FLOWER.

I first saw them, some years ago, growing wild in California, and thought I would cultivate them when at home. My success at first was not encouraging, but for a few years past I have been well repaid for my labor. I thought your readers would like to know about them.—W. I.

The Godetias are nearly allied to the Œnotheras, and are natives of California. The older sorts did not bear

GODETIA PLANT IN BLOOM.

our hot, dry summers very well, but the new and improved kinds recently introduced are eminently worthy of culture, and are fairly described by our correspondent.

GIVE TO THE CHILDREN.

There are many who have large gardens, and often the plants in these are thinned out and just thrown away. Those plants, should they be given to some poor neighbor, might prove a great blessing. A little time spent in persuading some poor overworked woman to try to grow a plant in her window would not be time thrown away; and as she looked up from her endless toil at your smiling gift a prayer might rise in her heart for you. Give to the little child a plant, its beauty may often keep that little one from harm. I have often thought if flowers could be introduced by those people who take tracts to the homes of the poor, that their visits would be welcomed with more joy. The love of flowers opens the hearts of most people, and the kind words of the giver in most cases sink deep into the heart, and the memory will linger and keep up good influences. The room that may be very bare will be brighter for some beautiful blossoms in it.

Some persons imagine that flowers cannot be cultivated without a large amount of time and labor is spent on them. This is a mistake; of course, large gardens, and costly greenhouse plants will require such, but we are dealing now only with a few—perhaps only one plant for the poor, the really poor. They cannot try, but many could give them a few seeds, a few plants, if they would only think over the matter. A single plant of *Tropæolum majus* would bloom and shed its delightful perfume over a room a whole season. A few seeds of Sweet Alyssum in a box would do the same. A Petunia plant put into a quart tin-can (from which Tomatoes, etc., may have been taken, and such are found in nearly all houses,) and given to some little boy or girl, with the charge to take care of it, and let you hear how many flowers it bore, will open up a fresh and new source of happiness to that child, which will linger in the heart and bring forth fruit

Those poor little children, pent up in crowded city limits; poor little things, who know not the delight of running over green lawns, and seeing birds and bees busy all day among the flowers, how they are to be pitied! And these children will pick up some poor wretch of a flower, flung away on the street, and delight over it, as a botanist does over a newly found plant. Can not some way be found to introduce the subject to the wealthy? Money might be better spent in this way than in many others. Fewer crimes might be heard of if poor children could be gathered into farms and taught to cultivate the ground. Far better this than sending these poor little creatures to prison for faults they commit, which often spring from the fearful abodes they dwell in. Offer a premium, Mr. VICK, to the person who gives the largest number of plants or seeds to the really poor.—M.

THE GLOXINIA RUST.

For a long time I have been waiting in vain to see some published information upon the subject of the disease in Gloxinias. The disease is what is called rust; it prevents the bulb from flowering. An inquiry was made some time since in the *Gardeners' Monthly* for a remedy for this disease, but it has had no reply. The pest is prevalent at many florists' and many private places. I wrote to an experienced horticulturist, Mr. JULIEN LAMAREIS, of Antwerp, Belgium, who informs me that it spreads and prevails only by neglect; that the bulbs in the first place should be well ripened, and then they are to be kept dormant for a season, and finally, they are to be started in the spring months, according to their disposition, that is, when they show an appearance of growth.

During the season of flowering the greenhouse should be kept at a temperature of 65° or 75°, but, when first started, they will stand a little more heat. They should be protected from the full force of the sun by whitewashing the glass, or some other means of slight shading. The temperature should be kept as even as possible and the air always in a moist condition. In watering, the bulbs should not be deluged with water, but only enough given every day to supply their wants.

These are the statements of a cultivator of more than fifty years' experience. My own experience I now cheerfully give. I cure every plant affected by the rust. My method is to procure a cold-frame and spade the ground within; no manure is necessary. I then take the plants affected with rust and sink them, in their pots, into the ground, until the rim of the pot is level with the surface of the soil. When all the plants are thus plunged in the frame, I cut away, with my knife, all the diseased foliage and stems, and then water the ground all over, so as to settle the loose soil about the pots; I then brush over the glass with whitewash and place on the sash, so as to retain the moisture; in a week or two there will be a fine, healthy new growth, and, after this, air may be admitted every day, not by removing the sash, but by tilting it up at the bottom two or three inches. The plants should be watered when they require it, and when the bulbs commence to bloom they may be taken to the greenhouse and treated as previously described. In the greenhouse we overcome the disease by a high heat. —PIERRE VAN LANDEGHEN, *West Philadelphia, Pa.*

CHILDREN AND FLOWERS.

It is the custom in many churches to devote one of the Sundays in each year especially to the children, and it is called "Children's Day." The children assemble in the churches, which are usually decorated with flowers, and the exercises are very pleasant, alike to old and young. Sometimes, however, only the afternoon and evening are given to the children, but the floral decorations are made Saturday evening, and the old people are wonderfully pleased and surprised at finding the church so beautiful on Sunday morning. This happened to be the case in one of our churches a few weeks since, and the pastor, Dr. STRATTON, was as much surprised as the rest. The sermon he designed to preach was quite inappropriate, and would not do with such beautiful surroundings, so he left the old sermon in his pocket and selected a new text, "Consider the Lilies." Everybody went home in love with the flowers, and, we hope, with the good Father, who has given his children so many beautiful things. One of the hearers was so excited, that, unable to restrain his feelings, he broke out in poetry, and sent us the following:

THE SERMON OF THE FLOWERS.

Come, wife, beside me sit you down
  Beneath our vine-clad porch's shade;
I went to church to-day in town,
  And doubly well the journey paid.

Along the road the sunbeams wove
  Their meshes rich with royal flowers,
And zephyrs fresh from field and grove
  Were wafting on the summer hours.

The birds sang out their anthems clear,
  From murmuring brook and cascade-fall,
And heaven's full arch seemed drawing near
  To shower rich blessings over all.

So, when the church bells rang their chimes
  Of welcome from the belfry old,
My heart was tuned like echo rhymes,
  From angel-hands on harps of gold.

But when I reached the open door
  I stood entranced with glad surprise;
The holy place adornments bore
  Of Him who paints the sunset skies.

From window arch, from altar rail
  To fretted roof, were woven flowers—
I seemed to see the holy veil
  That hides our view from Eden's bowers.

From altar high an incense rose
  Unseen, perfumed, from offerings there
With tints of bloom, like that which flows
  From rainbow pearls amid the air.

The sacred chant, the voice of prayer,
  The organ's notes all seemed to blend
To raise my soul above the care
  Of earth, to joys that never end.

And then the pastor rose, and gave
  His text, "The Lilies of the field"—
The words of Him who sought to save
  The lost beneath redemption's shield.

No vexing points of doctrine came
  In misty thoughts like troubling dream;
His text the flowers, his notes the same,
  His sermon one immortal theme

That sprang impromptu thought on thought
  Through lips just touched with living fire
From heaven's own altar, lips now taught
  By inspiration's holy lyre.

Dear wife, those garlands one by one,
  Tho' rich arrayed, will soon decay;
But winter's storm or summer's sun
  Can never drive those words away.

For memory often will unfold
  The garnered treasures of the hours
When there beneath the belfry old
  I heard the sermon of the flowers.

—SHERMAN D. RICHARDSON.

PILOGYNE SUAVIS.

MR. JAMES VICK:—A correspondent writes, in the June number of the MAGAZINE, of the *Pilogyne suavis* as an out-door vine. I wish to tell the ladies that it is equally adapted to in-door decoration. I have had one in my bow-window three winters, and it has been all I could desire. The foliage is much more delicate than that of the Cobœa or Ivy, and it is entirely free from insects; it grows rapidly, and sends out a great many branches that have the most beautiful way of drooping and clinging to each other. Mine is in the sitting-room, and is trained in such a way that I cannot sprinkle it, yet the leaves always look clean and glossy—the dust does not seem to adhere to it as it does to many plants. It starts very early from cuttings. When I put the vine out in the ground, I cut it back, and, when the new growth appears, I start slips for winter. I never take up the old root.

I have found the Abutilons, *Boule de Neige*, *Darwinii*, and *Roseaflorum*, very satisfactory plants for house culture. They are easily taken care of, and bloom for me from fall until spring without intermission, the tips of every branch being continually loaded with buds and blossoms. My Clerodendron is in full bloom, and its immense clusters of pure white and scarlet flowers attract a great deal of attention.

By far the most gorgeous flower in my collection is the *Hibiscus fulgidus*. It blooms at

intervals all through the winter. The flower remains out two days only; it would not do to have plum-pudding every day.

I am eager for new ideas on window-gardening. Not being the fortunate owner of a greenhouse, I cannot make application of the suggestions in that department. Sometimes I think we derive more pleasure from a reasonable number of plants in our living-rooms than we could from a conservatory. These are universally a confused mass, from over-crowding.

The handsome bound volume of your MAGAZINE lies on my table. I know of no periodical so well adapted to family use. It is a joy to the young; a rest and recreation to those who are bearing the burden and heat of the day; an amusement and solace to those who are looking towards life's sunset. It is a thing of beauty and a joy in our household. Long may it live and prosper. — AUNT FANNY, *Morningside.*

FARMERS' GARDENS.

MR. VICK:—In one of the numbers of your MAGAZINE you recommended farmers to have a vegetable garden, and pointed out very forcibly its advantages to the farmer's family, both for health and comfort. To all of which I most heartily agree, and have shown my faith by my works for a good many years. You also made some suggestions regarding soil, situation, &c., which were quite profitable to me. However, in some paper, and I do not now remember its name, I found a plan for a farmer's garden that makes vegetable gardening as little trouble and as inexpensive as field culture, so that no farmer, be he ever so pressed with work, need make an excuse on this account. It is simply this, instead of making beds, as is the common way, to plant everything in rows, the whole length of the garden ground. Say there is an acre in the garden, make three or four rows of Corn, if as many are needed, and far enough apart to use the cultivator; the same of Beans, Peas, &c. If planted in this way, a horse cultivator can be run through the whole acre just as rapidly as through any field, and very little work with the hoe will be needed.

I have tried that plan this year and am so well pleased with it that I recommend it to all farmers. Of course there are some parts of the garden that cannot be cultivated in this way, such as Asparagus, Parsley, Rhubarb, and other permanent beds. Currants, Raspberries and other fruits will need more space, and these can be planted on one side of the garden, but the work can be done with a one-horse cultivator. With this simple arrangement any farmer can have a good garden, almost without cost, at least, the cost will be trifling, and the work will be better done than usual with the hoe and spade.—M. H. W.

POTATOES.—LATE PLANTING.

I was glad to read the remarks of your correspondent recommending the late-planting of Potatoes. It is a practice I have followed for a great number of years, and with uniform success. With very late sorts, or, rather, kinds that require a long season, perhaps it would not answer; and, of course, early kinds, either for market or the table, must be in the ground as early as possible. I know nothing about the best way for a more southern country, but in Western New York I would not plant Potatoes until the last of June—just to get the work done before haying commences. This time has a great many advantages. They escape the long drouth which we almost always have in May and June, and which I believe does the plant a permanent injury; the planting and hoeing comes in the most convenient time; the work is all done rapidly; there is less time for weeds to grow; less time to fight bugs, while the Potato, making a vigorous growth, has more resisting power, or the bug don't like a vigorous plant. There is certainly some reason why they are not so troublesome on late-planted Potatoes, as suggested by your correspondent. — Y. *Brighton, N. Y.*

SWEET PEAS.

I only wish you could see my Sweet Peas. They are the sweetest flowers I now have in my garden. I have a row thirty feet long, and they are now, July 6th, more than four feet in height, and just nicely in flower. So many buds are forming, and they are still growing so rapidly, that I think they will continue in bloom a long time. I do not allow any seed to ripen, because that injures the flowers, or rather, the plants, and shortens the time of blossoming. They are supported by common brush. Every one that sees them is in love with them, and say they will have some next year. You can recommend the Sweet Peas with confidence. —ELLA.

ROCKET LARKSPUR.—I send you a plant of Rocket Larkspur grown from seed sown this spring. You will see that the plant is fourteen inches in height, and the spike of flowers eight inches, quite thickly set in the spike, and the flowers very double. It is as beautiful as any Hyacinth. The dry weather in May very much injured my Larkspur bed, and prevented many of the seed from germinating.—F.

THE CLEMATIS.

In one of the numbers of the MAGAZINE of last year, in describing several kinds of climbers, you recommended the Clematis, and so highly that I obtained the largest plant I could get last autumn, and set it in front of my piazza. It has now more than forty large blue flowers—almost as large as my hand—and is one of the most interesting plants I have ever seen, for so small a one. Last week I returned from a

somewhat extended journey, and although so well pleased with my little plant, I would not write you about it, but when away I saw scores of good, large Clemats plants, wonders of beauty. It seems to me this is destined to be the finest flowering climber, for America. I am so pleased with it that I want all your readers to know about it. I have seen several kinds, of different names and colors, but none seem to be so vigorous and flower so abundantly as *Jackmanii*. This is a deep, rich blue.—M. H. D., *Frankfort, Ky.*

THE EVENING OF LIFE.

MR. JAMES VICK:—I had no knowledge of your valuable MAGAZINE till last January, but, since I became a subscriber, I have been greatly interested with its contents, especially the correspondence, which is instructive, homelike and amusing.

I have no garden where I can raise flowers or vegetables, and, as I am only a boarder, I cannot conveniently have window-plants, but the country is free and open, and I admire the wild flowers, and when I look at the vast number and great variety of vegetation spread before me, the beautiful foliage, the variegated leaves, the splendid colors displayed in the flowers, the manner of their growth, and the important end they are intended to answer, I feel bewildered and lost in admiration.

I am an old man, and will be seventy-five years of age in a few weeks. I am in good health, and active, and, when the sun is not too hot down here in Florida, I take a walk into the woods, and about the swamps, and gather wild flowers, but I am at a loss for names, and all is new to me. I was pleased to find the figure of a plant I have often admired and brought home, but did not know the name until I met with it in your June number, which you name Sundew, or *Drosera rotundifolia*. I have spent most of my life in town or city in securing the necessaries of life for self and family, now I am a solitary old man, and trying to make the evening of life cheerful, happy and pleasant, and I find the notice of flowers and plants, and vegetation generally, help to make me wiser, better and happier, and expand my views of the perfection of the Creator.

When my business habits were interrupted, I wanted something in their place to engage my attention, and I have been led to interest myself with wild flowers and Ferns. I have got a small collection of Ferns and would be pleased to add to their number. There seems to be something about Ferns very interesting, and I suppose different localities will produce different kinds.—WM. F., *Jacksonville, Fla.*

DAHLIAS FROM SEED.

We lost all our Dahlia roots grasshopper year, and had done without until last year. I bought a paper of seed and planted them on the last of February; twenty-three plants came up. When they got four leaves I transplanted them into another box. The first day of April I set them in a flower bed out of doors; some of them damped off, some the cut-worms took, and some furnished supper for a hungry rabbit; so, it left me only fourteen. These grew finely, and, on the 20th of June, one bloomed, yellow tipped with red; in a few days a white one, in each petal a thread of red, and by the 1st of August eight were in bloom, and all as double as could be, except one. I took them to the County Fair, and got the first premium for the best collection of Dahlias. Now, the 30th day of May, one is in bloom, dark maroon. We used to think them a fall flower, but it is not so in Kansas. I believe my yellow one had over one hundred blooms last year. I shall never be without Dahlia roots again, since they can be raised so easily from seed.—J. S., *Hepler, Kansas.*

TUBEROSES.—D. H. HITCHCOCK, of Hilo, Hawaian Islands, to whom we sent Tuberose bulbs the 11th of March, wrote us, May 30th, "The Tuberoses have fine flower stems, and will be in bloom in a few days." This is rather quick work.

THE BEST RADISHES.

Few vegetables are more grateful and refreshing than a tender, crisp, cool Radish, and we know of nothing more unendurable and indigestible than one hard and thick-skinned. A Radish with a skin as thin and tender as tissue paper, with the flesh almost bursting through, so that it will crush between the thumb and finger, is a luxury for breakfast on a warm morning that we enjoy most heartily. A Radish to be fit to eat must be grown rapidly, with plenty of heat and moisture, and in a warm soil, and yet must have air. For several years we have endeavored to cultivate the best, and do it well.

It is a pity we have no public gardens where vegetables and flowers could be fairly tested and reports made through the public press, like the Chiswick Gardens, of England, reports upon which the people could rely, instead of the interested statements of those who have seed for sale, and are anxious to introduce and find a market for new things at a high price, without much regard to their real value. This is why not one in a hundred new things heralded forth with a blast of trumpets is ever heard of after a year or two, for then they have become plenty and there is no object in telling more than the truth, and their worthless character has become pretty well known.

The following report of an exhibition of Radishes, made by the Royal Horticultural Society of England, and mainly from the samples grown at the Chiswick Gardens, though rather long, is so full, embracing all known kinds, that we give it entire, feeling that it will be valuable for reference for many years. We find it in the *Gardeners' Chronicle*:

"As usual, a large number of samples of Radishes were sown. It must be so where thoroughness is one of the prime characteristics of a trial. Samples were obtained from many sources at home and abroad, and the various types in cultivation were represented at Chiswick. Among the Turnip Radishes the earliest Erfurt Scarlet Turnip was a very notable one, because of its adaptability for forcing in frames and for small gardens; it is quite early, has a very short top, much shorter than the ordinary red Turnip Radish—too short, perhaps, to be available for bunching for market, but a very useful one notwithstanding. It is paler in color than the ordinary Turnip Radish, and does not run to seed too soon. The round Rose hatif (Early Rose) (Leroy), is a very fine stock of a bright rosy-red color, such a color as is taking to the eye, and gives a fresh appearance to the bulbs. It is somewhat olive-shaped, and makes a distinct and first-rate variety. The round Ecarlate hatif (Leroy) (Early Scarlet) is a rich-looking dark red Turnip Radish of quite a striking color. There were many samples of ordinary scarlet Turnip Radishes, some better and truer to a character than others, as might be expected. The French Breakfast Radish is a rather small and crisp red Turnip variety, with a blotch or spot of white at the bottom of the bulb. It is mainly used as an early forcing variety. The scarlet Olive-shaped Radish, which is doubtless an oval-shaped selection from the red Turnip, is as early as any, but it soon ages and becomes coarse and hollow. The half-long deep scarlet is of a bright red color and longer than the Olive-shaped, coming immediately between it and Wood's Early Frame, but has no particular merit. The rose Olive-shaped does not differ from the ordinary Olive-shaped Radish. The half-long rose appears to be the same as the half-long scarlet, only a little paler in color. The violet Olive-shaped Radish (Veitch's Gem) is both handsome in shape and distinct in color, and, like the French Breakfast, tipped with white. A sample from ERNST BENARY was identical with the foregoing. All the Olive-shaped Radishes appear to go pithy, and they should be eaten quite young, and the seed sowed successionally. The early purple Turnip Radish is not so attractive-looking as the red Turnip, but does well to mix with, by way of giving a little variety. It is quite distinct in character. A Radish named Violet de Tournay is a long pur-

ple Olive-shaped Radish of no merit. The long purple has a long neck, is coarse-looking, and apt to run quickly to seed. Of Wood's Frame Radish, which is a stouter and shorter Radish than the long scarlet, and also of the latter, there were many samples. The London Particular Long Scarlet Radish (who could have given it the barbarous name?) is just the ordinary long scarlet. The long scarlet-salmon is the same as Wood's Frame. The long scarlet rosy-salmon is a pale scarlet. If any difference may be said to exist between the long salmon and the long scarlet, it is simply one of color, and it is a matter of selection only. Beck's Long Scarlet Radish, as known some years ago, was an extra long Radish of a deep bright-red color. The long white Naples Radish was represented by several samples bearing different names. The white Russian Radishes, a pure stock of this; and the large white Vienna is the same. The white Hospital Radish of VILMORIN & Co., is a long white Olive-shaped type. The Rave de Marais of Leroy is a long white Radish with a purple top, and coarse looking, certainly not so nice in appearance as the pure white Naples.

"Among the white Turnip Radishes the early white short-leaved is a white counterpart of the Early Erfurt Scarlet Turnip, differing only in color; it, too, has a very short top, and will do well for growing in frames. It may here be said that the white Turnip Radishes appear to last longer in good table condition than any other, the common Turnip not excepted. Among many samples of white Turnip Radishes the foregoing was the only one of them worthy of special mention, except to say that generally the stocks were very good. The yellow Turnip Radishes are no doubt selections from the white Turnip. A sample from Messrs. CARTER & Co. had quite a deep yellow rind, and a very fine, firm, sweet, crisp white flesh. ERNST BENARY'S Olive-shaped yellow summer Radish is also very good. Then there are grey round Radishes, which are also selections from the white round, while the black Turnip Radish is of a dark grey color tinted with purple, and, like the yellow, of a very good quality. An earlier sowing, in which a good number of the samples had gone to seed, showed that the early white short-stemmed or short-leaved stands well, and is a long time getting away to seed; and the same remark applies to the earliest Erfurt Scarlet Turnip Radish of BENARY, which appears to be of a very hardy character also."

EDELWEISS.—An English florist has succeeded in flowering the celebrated Edelweiss of the Swiss mountains.

ITALIAN SUGAR REFINERIES.

The Italians are refining sugar to a large extent. The Ligure Lombarda refinery employs 600 hands, and last year refined 35,000 tons. In a report on the trade of the consular district of Genoa, the report says: "In going over the works of the Ligure Lombarda, and the distillery annexed to it, I was sorry to notice nothing English about the place. The two very fine driving engines were from the United States, and all the rest of the valuable plant was from Prague and from Vienna; nothing British but the coal, and the jute from Dundee for making the bags (some 400,000 a year), and I heard that even this sacking is in future to be made at Voltri, from jute imported direct for that purpose."—*English Journal.*

England for long years has been the workshop of the world. Its productions are not so neat and tasty as the French, but a good deal more sensible and durable. Without this advantage we hardly know how her teeming millions are to be supplied with food. We rejoice at the prosperity of our own country, but could not feel any pleasure to know that the industrious workingmen of England were destitute of work and food.

EXAMPLE BETTER THAN PRECEPT.

Mr. W. H. ROGERS, of the Red Lodge Nursery, Southampton, is a believer in the doctrine that what is beautiful in nature has in it "the charms of gentleness," and something of the charities that soothe, and heal and bless. To this end he recently invited the children of the Southampton poorhouse schools to visit his nurseries and inspect the Rhododendrons in bloom, of which he has a very fine collection. To make the visit more agreeable to the little ones, some slight refreshment was provided at the expense of Mr. ROGERS. In addition, Mr. ROGERS has sent to the workhouse a large number of bedding plants to be used in the gardens and yards of the house. In such praiseworthy ways this well-known South of England nurseryman "makes his heart's love understood by kind deeds."—London *Gardeners' Chronicle.*

When we next visit Southampton, which we hope to do before long, we shall certainly take Mr. ROGERS by the hand and thank him for the good example he has set the world.

POTATOES TO ENGLAND.—The little, grand English Isle is so crowded with people that she has to import from other countries immense quantities of bread and meat, and even Potatoes. Figures show that France alone sends to England about twenty-two thousand tons of Potatoes every year.

JAPANESE GARDENS.

The love of flowers, shrubs, and trees, is widely spread in Japan; even in the busy commercial quarters of the large towns almost every house has its garden spot with its tiny dwarf shrubs. These dwarf shrubs and trees probably owe their origin to the narrow limits of space, and their production is carried on to such a ridiculous degree that a Dutch merchant was shown a box three inches deep, and with a square inch of surface, in which a Bamboo, a Fir, and a Plum tree, the latter in full bloom, were growing and thriving. The price asked for this botanical curiosity was about $300. The method of dwarfing is by checking the circulation of the sap, cramping the extension of the branches, and chilling the roots in flat porus pots, which are kept constantly cold and wet. Many dwarf plants have striped or variegated leaves, and the production of such varieties, both dwarfed and in the natural size, is a favorite hobby with Japanese gardeners. In the portions of the garden immediately surrounding the house no tree or shrub is allowed to retain its natural size, but within one sees fans, ships in full sail, round tables, candelabra, large crescents and stiff rectangular walls. A soft, velvet-like turf covers the ground, and the clean gravel paths are bordered with gay stones, dwarf trees, and flower vases. From the ponds, in which gold fish swim, and from the artificial rivulets rise mossy little rocks, to which tiny bridges of every conceivable shape lead. Such spots require too much care and attention to admit of wide extension, and so they generally occupy but a comparatively small space in front of the mansion. High pruned hedges enclose these green boudoirs, where nature is disguised and curled as conventional culture and the usage of "good society" demand. Without these hedges lie the wilder parts of the garden, where nature is left more to herself. Japanese gardens look most beautiful towards the end of autumn, when the foliage of the Maple assumes a bright purple hue, and the Azaleas and Wax trees are clothed in dark purple tints. About this time, too, the winter Chrysanthemum is in full bloom; it is the favorite flower of the Japanese, who possess countless varieties of it. The size and splendor of its star-like flowers are often incredible.—J. DOUGLAS, in *Gardeners' Chronicle*.

TO DESTROY ANTS.—A German publication says carbolic acid and water will drive ants away from any grounds—100 parts of water to one of carbolic acid. MIX in a tub and stir repeatedly for twenty-four hours, taking off the scum that rises to the top.

ABSENCE OF FRAGRANCE.

Having recently traveled in several parts of central and southern Spain, I was struck with the remarkable absence of fragrance in the flowers. Whilst strolling through the fine market at Barcelona I bought several splendid bouquets of roses, comprising Glorie de Dijon and other usually sweet-scented kinds, but they were entirely scentless. I placed them in water in my bedroom at the hotel, and kept them there for a few days but no perfume was emitted. The Banksian Roses were also destitute of smell. I particularly desire to draw attention to this latter fact, because two years ago precisely at the same time of year I visited Genoa and Hyeres, where these Roses existed in thousands, rendering the air for miles around redolent with their exquisite fragrance. In the gardens at Madrid and Seville this absence of smell appeared to prevail among all the flowers. There was, however, one exception—as one traveled through the Orange groves for a long distance by train, especially on the approach to Malaga, the perfume was overpowering. The Orange blossom appeared to be the only one, however, which had this delicious scent; that of the Violets was faint. During a lengthened residence in India I remember that scarcely any of the flowers possessed smell, but if I gathered Jasmine, Oleander, or Tuberose, and placed them in water in the house, the scent became so powerful that I invariably had headache and was obliged to eject the flowers. The sun had certainly much power at Barcelona and Madrid; its rays were of a tropical nature at Malaga and Seville, as testified by the splendor of the Bougainvilleas and Lantanas at the former place. Does solar heat dissipate the aroma of flowers? They get an abundance of it in Seville, where, I think, rain seldom falls.

MULCHING PEAS AND BEANS.—English gardeners have lately discovered that mulching Peas and Beans is a useful practice in very warm seasons; if such is the case in England it certainly would prove servicable here, where every summer is a hot one, in their estimation of heat. The material used for mulching is either well-rotted manure or grass. The mulching of these crops has never been tried to any extent in this country.

SLUGS.—English papers are deploring the great destructiveness of slugs this season. A little later they will complain of the wasps that do such mischief to the ripe fruit. We complain a good deal, and, perhaps, have some cause, still we have no insect enemy so destructive as the sting slug, and nothing injurious to our ripe fruit like the wasps of Europe.

THE NETTLE AS A FIBRE PLANT.

The Stinging Nettle, *Urtica dioica*, is now receiving much attention in Prussia to determine its value for textile uses. "Samples of fibre and of manufactured stuffs, both machine and hand made, machine and hand made yarns, twine, ropes &c., as well as of bleached fibre suitable for paper-making, have all been submitted for inspection to the Department of Agriculture. When properly prepared the resemblance of Nettle fibre to that of cotton is said to be very great and to have 'excited universal surprise and admiration.'" It has been advised to set the young plants about a foot apart each way, on land that has been previously well prepared by deep plowing and liberal manuring. Weeding and hoeing will be necessary only for the first two years, and it is supposed that a plantation will remain productive from twelve to fifteen years, by manuring every other year. The crop is harvested before the seed ripens, and, therefore, there is no danger of its spreading on to adjoining grounds. The operations to prepare the fibers are similar to those performed upon Hemp.

TULIP CULTIVATION IN HOLLAND.

The Dutch official trade returns show that the exports of flower bulbs during the sixteen years from 1861 to the end of 1876 amounted in value to 19,640,000 Dutch florins (about $8,000,000), or an annual average of over $500,000. It appears that the value has been annually rising; thus the export for 1876 is set down at 1,666,000 florins (nearly $700,000). According to the latest survey the land devoted to rearing bulbs of Tulips, Hyacinths, and similar flowers amounts to 240 hectares, or nearly 600 acres. Of these about 10 acres are in the neighborhood of Egmont, about 90 round Velsen, while the remaining 500 acres are in the neighborhood of Haarlem, Schoten, Bloemengeld, and Heemstede. But besides these special localities, where the cultivation of the bulbs is carried out on a large scale, there are innumerable small patches scattered all over the country where Tulip and Hyacinth bulbs are reared with great care and success.

ALEXANDER PEACH.—Mr. RIVERS, the great English fruit-grower, has found the American Alexander Peach to be not only the earliest, but large and fine in every respect. He is afraid that the refrigerating process on board of steamers may be the means of inundating the English market with American Peaches, and, therefore, the English farmer to compete against trans-atlantic orchards must select sorts that will ripen before the American harvest begins.

THE FLAGGING OF CUT FLOWERS.

We often hear surprise expressed as to the admirable way in which the forced flowers used in Covent Garden stand in bouquets, and other ways in which they are employed; and when we take into account that after being cut by the grower, generally a day at least before they reach the market, they have to remain until made up, and then often have to be sent across the kingdom to grace the hand of a bride and her maids attendant, looking as fresh as if newly cut with pearly dew upon them, it is evident that those who grow them know the treatment best calculated to promote lasting powers. It is a well-known fact to all who have had much experience with cut flowers, that most things, if stood in water for a few hours after being cut, and before they are made up, will last far better in bouquets, button-holes, or in any other way that necssitates their being mounted and placed so that their stems cannot actually be put in water afterwards; and this holds good even still further with Ferns and other leaves that are employed for mixing with flowers. The more water they can absorb after being severed from the plant before being arranged the better they will stand. For this purpose the Ferns, before being sent to market, are immersed altogether for some hours in water. We saw some made up in a bouquet on New Year's, and still quite fresh, after having been cut on December 11.—*Gardeners' Chronicle.*

AMERICAN POMOLOGICAL SOCIETY.

The London *Gardeners' Chronicle*, in referring to the meeting of this society in Rochester, September 17th, says: "The coming session will derive a special interest from being held in the midst of one of the great fruit-growing regions of the country, and in a district unequaled in the world for the extent of the nursery interest in the propagation of fruit and other trees. It is believed that the City of Rochester is more easily accessible to a larger number of persons interested in the objects of the Society than any other city in the United States, and a full attendance and an interesting session are therefore anticipated.

TOMATOES, we judge, are gradually increasing in popularity in England, though the progress is rather slow compared to this country. The *Garden* says acres are now planted where formerly there were only dozens, and hundreds of bushels of fruit are yearly imported from America, and very large quantities from France. The price of good out-door Tomatoes in the Covent Garden market is about $5 per bushel.

NUT-TREES FOR TIMBER TRACTS.

MR. VICK :—Can you give me instructions how to plant and raise Black Walnuts, Butternuts, Hickory-nuts and Chestnuts from the seed. A number of persons are taking up land here under the United States timber-culture act, and wish to raise such timber, as there is none of it in the Black Hills.—D. K., *Central City, Dakota.*

To raise trees from the different kinds of nuts mentioned by our inquirer, it is only necessary to sow or plant good, sound nuts in the fall, or, if one is obliged from any cause to keep them over until spring, they should be mixed with sand and kept moist during the winter, and then planted out as early as possible. If laid on the ground, or in a shallow bed with a few inches of soil over them, where they will be constantly moist, the nuts will winter in the very best manner. The nuts may be planted in a nursery and the young trees transplanted from it when they are one, two, or three years old. In this case, the soil for the nursery ground should be mellow and rich, and the nuts should be planted in rows four feet apart and six to eight inches apart in the row. Another way is to plant on the timber land which has previously been cropped, and which is in fine tilth; here the rows are placed at four, six, or ten feet apart, and the nuts from one to two feet apart in the rows; the young trees are afterwards thinned out and transplanted.

Still another method, we think, could be adopted to advantage: this is to lay out the ground for corn, the rows to stand five feet apart each way; in every other row the nuts shall be planted in every other hill, so that in that row the Corn and the nuts shall alternately occupy a hill, and every other row shall be a full row of Corn. In this way we shall have three-quarters of the ground occupied with Corn. We would plant about three or four nuts in a place, scattering them so that they should be about six or eight inches apart; of those that grow, all but one can be transplanted. The trees left would stand ten feet apart all over the ground, and probably this is not too close for the trees to stand when large. The law requires that the distance apart shall not exceed twelve feet. Although the Corn crop may not be hoed, we advise the hoe to be used about the young trees, even two or three times during the first year. All the attention given them will be time well spent. If it is desired to plant the ground close, to allow of thinning out and using a large part of the timber as poles, there will be enough young trees to cover the ground at five feet apart, by transplanting the next spring all but one from each group. The fall of the first year, we would draw the soil up around the young trees with a hoe, which will prevent their being thrown out by the frost, or, rather, by the alternate freezing and thawing during all the winter and early spring months.

VARIETIES IN PLANTS.

Some questions have been asked me that I am not sure of answering correctly. May I, therefore, seek aid from you?

1. A flower becomes double, we say, by changing its essential organs into petals. If cultivation does this, how? What is the philosophy of it?

2. In a double flower, if all the stamens are changed, how is fertilization accomplished? Are there a few stamens unchanged, or is it done by single flowers?

3. Are new varieties produced by putting the pollen from one upon the other?

4. In grafting, while the fruit partakes mainly of the graft, does not the stock have some little influence upon it?

5. Why will not the seed of an Apple, if planted, come up of the same variety?

I am unable to find any other authority than "they say" on the matter, and will be very grateful if you will inform me.—A. C. P., *Danville, N. Y.*

The underlying principle involved in the solution of most of these questions is that of variation in species. To illustrate the subject, let us take the Lily. We have the common White Lily, *L. candidum*; Gold-banded Lily, *L. auratum*, and the Lance-leaved Lily, or *L. lancifolium*, as it is called, but properly, *L. speciosum*, and many other kinds. The distinction of these kinds is very clear, and we do not hesitate to decide what each kind is the moment our eye falls upon a specimen. These kinds are termed species, and, as before remarked, there is no failure to recognize their individuality. But, if

we will examine any number of plants of the Gold-banded Lily, or of any other kind, we shall find certain peculiarities pertaining to each individual, by which it differs from all the other individuals of the species. The peculiarities to which we refer may relate to the general habit of growth, to some slight change in the form of foliage, to the time of opening the buds in the spring, or of flowering or maturing the seed, or even to the color of the flowers, or numberless other slight variations. As in the human race, or the lower animals, the peculiarities of an individual may be transmitted to his posterity, so in plants a marked feature peculiar to a single plant may be reproduced in some of the progeny of this plant, and if we select out the plant that shows this feature most strongly, we shall find in the seedlings from this plant a stronger and stronger tendency to development in this particular direction, whatever that may be. By continually selecting and rearing seedlings with this object in view, in time we fix the peculiarity. and a large proportion of the seedlings exhibit it. When this stage is reached, we consider that a new variety has been developed. In the case of the Lance-leaved Lilies, we have several varieties produced from the same species; there is *rubrum* and *album* and *punctatum*, and within a very few years a new white one has been brought into the trade, differing from the other white one, *album*, in having the midveins of its petals a clear white, instead of a very rosy tint, as in *album*. The process of developing and fixing a variety may be hastened by judiciously fertilizing the flowers of one plant with the pollen of another, both of which exhibit the feature we wish to transmit.

1. Applying the principles we have thus briefly stated, in answer to the first question, we would say that finding a tendency in a plant to develop double flowers, we continually select the seed from those that show the flowers most completely doubled, or transformed. In many double flowers, the additional petals are due, not only to transformation of stamens and pistils but, to an unusual capacity of the receptacle for their production.

2. If all the stamens of a flower should be transformed, the fertilization of that flower could only be performed by the pollen of another.

3. Cross-fertilization is effected by the pollen of a flower of one plant being introduced to the stigma of a flower of another plant.

4. It is a question that has often been discussed, and there are some facts showing the stock in some cases to have a perceptible influence on the produce of the graft, but we know of no reliable experiments that have ever been conducted to throw light on the subject. One thing is certain, the difference between the stock and the graft must be very wide to produce any appreciable effect.

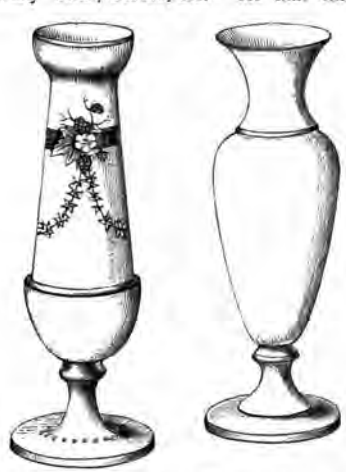
5. As it is a settled fact that all seedlings differ, and that the variations in Apples, which we consider valuable, and mark the varieties, are fine distinctions, it follows that it is an impossibility for an Apple, or other fruit, to exactly reproduce itself.

SMALL VASES.

MR. VICK:—How about that further talk about the bud-holders, or small vases, that you promised. The time is at hand for such things, and I was glad some one asked you about them, for I have been wanting to know

where to get them, and the price also, so, if you tell us more about them, don't forget the price.—SUBSCRIBER.

Some months since, at the request of a correspondent of London, Ohio, we gave illustrations of about a dozen small vases, suitable for holiday buds, Roses, &c. At that time, we



promised to give further illustrations, but when we had collected together about a score or more for this purpose, they were so similar in form, differing mainly in the ornamentation, that we

gave up the work as unnecessary. The vases for buds or single flowers are merely glass tubes, differing somewhat in form and ornamentation, and varying in price from twenty cents to one

dollar each. For groups of flowers, baskets are now generally used. We give a few designs, both old and new.

LAYERING CARNATIONS.

MR. VICK:—Will you please give directions for layering Tree Carnations in the next number of your MAGAZINE.—MRS. F. R. R., *Bellona, N. Y.*

Carnations and Pinks are usually layered about the last of July or early in August. The preparatory operation consists in making a slit through a shoot, so as to split it at the joint where it is layered. With a sharp knife, commence about half an inch below the third joint from the top and split the shoot through the joint and above it about an inch, so as to form a tongue; cut off that part of the tongue which extends beyond the joint; now remove the soil about two inches in depth, and then bend down the shoot so that the split surface will come to the ground at the joint, taking care to keep the tongue pressed apart from the stem, by a little earth placed between the parts. The layer can be kept in its place by a little wooden peg, and, after this is inserted, the soil is drawn over the part lying in the ground. The plants should be well watered a day or two before layering is commenced, and, if the soil about the plants is not quite soft and mellow, some of this character should be placed around each plant to be operated upon; immediately after layering give a good watering. The only attention hereafter required is occasional watering, to keep the plants in a thrifty state. In about two months the shoots will have become well rooted, and may then be removed from the parent plants and potted off into small pots. For a week or ten days after potting, the plants should be kept rather close in a cold-frame, and then air may be more freely admitted as they become fully established.

Carnations are frequently propagated by cuttings, which are called pipings, and, when this mode is employed, the operation is performed earlier than layering, so that the young plants may be well rooted and started before winter. A hot-bed, with a very slight heat, is used with great advantage in striking the cuttings, which are inserted around the edges of small pots. An English florist, a few years since, discovered a new way of striking these cuttings, which he thus relates:

"Twelve months ago, when I went to pipe my Pinks, I put each sort, after dressing them, into a pot with water, the pipings being packed close together; these I placed under a bush until I got my bed ready. By accident I omitted to plant one lot, and left this in the pot. I did not see them for three weeks or more, and when I came to look at them they were all rooted. I at once took them and planted them in the stock-bed and did not loose a plant. This year I adopted the same plan with all my Pinks, only, instead of putting them in the

LAYERED PLANT OF CARNATION.

shade I put them in the sun. They struck without a single failure, and no one can have finer plants."

Tree Carnations are raised very freely from seed, but particular varieties may be propagated either by layers or cuttings. Florists raise them from cuttings made in January or February in the propagating house. The cuttings strike in four or six weeks, and are then potted off singly and brought along until the weather admits of planting them out in the open ground.

BOTANY.—Mrs. M. E. P., of Forest Grove, Oregon, desires to be informed of the best book for an amateur florist. We advise either *Gray's School and Field Book of Botany* or *Wood's Botanist and Florist*. Besides being elementary treatises of the principles of botany, each of these books contains accurate descriptions, not only of most of our native plants, but also of those exotics that are in cultivation in this country and those that have become naturalized.

FLOWERING CURRANTS.

To a gentleman in Salem, Oregon, we are indebted for several specimens of the Flowering Currants of that region, with a kind offer to forward seeds or cuttings. The Flowering Currants have been long cultivated in the nurseries of both Europe and America, and can be obtained anywhere, at the price of ordinary flowering shrubs. Several double varieties have been grown from seed, and an engraving of one of them, which we have had in our possession a score of years, we give to our readers. Florists have so thoroughly searched the world for new plants that it is not easy to find anything of value that has escaped their vigilance. Hundreds of plants are sent us every year as new and unknown, with which we are quite familiar. We are none the less thankful to our friends for their zeal and kindness, for in this way we have been enabled to add a great many things to our herbarium that we did not before possess.

RAISING PLANTS FROM SEEDS, BULBS, ETC.

1. How long before Geranium seed will raise plants large enough to bloom, if sown in August?

2. When could I get blooming plants of Carnations, Fuchsia and Heliotrope, raised from seed?

3. How long does it require to raise Coleus plants from the seed large enough for bedding?

4. What time in the fall should I get bulbs to have them bloom at Christmas?

5. What plants are best for bouquets in winter?

6. What age are the bulbs of Amaryllis and Callas that are sold in the trade, and how long before they bloom?

7. What size are the fancy-foliaged Caladiums?

I shall put up a small greenhouse this fall, and want to get a stock of plants started for it, so that they will be in bloom in the winter and early spring.—A. D. S., *Baraboo, Wis.*

1. Geranium seed, sown this summer or fall, should make plants large enough for bedding out and blooming next spring.

2. Carnation seed is mostly sown in spring, and when the young plants have made a half dozen leaves they are planted out, and during the summer make good, strong plants, suitable for blooming the next season. If the seed should be started in the fall, the plants would be stronger at planting time in the spring, and might show a few blooms the first season. Fuchsia seed may be sown any time after midsummer, in shallow earthen pans, or in boxes, and have a slight covering of soil, and be kept constantly moist until they germinate. When the young plants are large enough to handle, they can be potted off singly into small pots and kept in a growing condition. When the small pots are filled with roots the plants can be shifted into larger ones. If the plants are kept in a vigorous and growing condition, they will bloom the following spring. Substantially the same treatment will apply to the Heliotrope in raising it from seed.

3. Coleus seed sown early in spring, say in March, will make plants, which, if properly cared for and grown, may be bedded out in June.

4. As to having Dutch bulbs flower at Christmas, there is no certainty of it. For this purpose only the Roman White Hyacinth can be depended upon. It is possible under the most favorable conditions to get one or two of the very earliest varieties of Hyacinths into blooming at the close of the year, but it must be with such an amount of care and attention as to be unworthy the attempt. The Roman White flowers very freely, and is planted by florists in large quantities, for flowers in the season of the winter holidays.

5. For winter-flowering plants the main dependence must be upon Geraniums, some varieties of Fuchsias, Ageratum of different kinds, Begonias, Bouvardias, Callas, Carnations, Eu-

patoriums, Double White Feverfews, Heliotropes, Libonia floribunda, Stevias, Chinese Primroses, Deutzia gracilis, etc. Besides these, many other kinds of plants can be employed that will give a moderate amount of bloom for a long period, or a profusion for a short time, and it is unnecessary to mention them now.

6. The bulbs of Amaryllis and Calla sent out by responsible dealers are of blooming size and age, unless it is otherwise stated.

7. Fancy-foliaged Caladiums are sent out when they are strong enough to make good plants.

ROSE-BUGS.

Inclosed find a bug that is making havoc among the Roses in this section. They are doing a good deal of damage to other things. What are they, and what is your remedy for them?—W. A., *Pultneyville, N. Y.*

The insect is the Rose-chafer, or Rose-bug, *Melolontha subspinosa*, a most destructive creature, and one difficult to deal with. The usual insect-destroying substances are ineffectual with the Rose-bug, and the only way of dealing with it, yet known, is to pick them off by hand and throw them into scalding water, or otherwise immediately destroy them. In the morning, when the cold renders them inactive they may often be shaken from the bushes or from the trees and received in a sheet when they fall, and then be destroyed—for they often attack the common fruit trees. Dusting the plants and trees that they attack with powdered lime will very much diminish their ravages.

Having been rid of these insects for several years, they have again visited us in this section this year in great force. The following is Dr. HARRIS'S description of the insect: "This beetle measures seven-twentieths of an inch in length. Its body is slender, tapers before and behind, and is entirely covered with very short and close ashen-yellow down; the thorax is long and narrow, angularly widened in the middle of each side, which suggested the name, *subspinosa*, or somewhat spined; the legs are slender, and of a pale red color; the joints of the feet are tipped with black."

The eggs, about thirty in number, are deposited from one to four inches beneath the surface of the soil, and are hatched in twenty days. The grubs feed on the tender roots within their reach, and attain their full size in the autumn, when they are nearly an inch long and an eighth of an inch in diameter, of a yellowish white, tinged with blue toward the hinder extremity. About mid-autumn the grub descends into the ground and passes the winter in a torpid condition. In spring it approaches the surface, and, by turning about many times, forms a cell, or cavity, of an oval shape, of which the inside is hard and smooth. Here, during the spring, the grub is transformed to a pupa. Early in summer the mature insect emerges from the ground and is ready to commence its depredations on its favorite vegetation.

PLANT NOTES.

MR. JAMES VICK:—To the list of free-flowering Begonias in the June number of the MAGAZINE I would add *B. incarnata*, an old, but certainly a very fine free-flowering variety. *B. foliosa* is another beautiful variety, and is in all respects admirably adapted for hanging baskets, where its small, neat foliage cannot fail to attract attention; it is also very fine as a single specimen, its flowers being white, but small, and they are very freely produced.

Are the California Ferns mentioned in the June number of the MAGAZINE introduced into cultivation yet? If so, are they hardy, or do they require the protection of a greenhouse during the winter, and how does *Gymnogramma triangularis* compare in beauty with *G. chrysophylla* and its varieties.

In what respect does *Zinnia Darwini fl. pl.* differ from *Z. elegans, fl. pl.*

E. J. C. inquires (page 148, May number) for information about the cultivation of *Mandevillea suaveolens*, and as I have been quite successful in its cultivation in pots, I will give my method of treating it. About the middle of April I turn my plant out of its pot, and I also remove the greater part of the soil, and also cut back some of the roots, if there happens to be many of them. I then repot it in the same pot, using ordinary potting soil, with a good portion of well-rotted stable manure, and then place it in a warm, light place, and water carefully until it commences to grow. About the 10th of May I plunge it out of doors to a trellis, and at the same time I form a basin around the pot, so that it can be watered when necessary. This basin I fill with coarse stable-manure—this prevents the plant from becoming dry so soon after it is watered. After it is plunged, all that it requires is a bucket or two of water once a week, and the branches must be looked over occasionally and tied up, as they are liable to be broken off when young by the wind. If it grows as it should, it will commence to bloom about the middle of July, and continue blooming until frost. After the first light frost, take up the pot, cut the plant back and place it in the greenhouse. It can be placed under the shelf, if care be taken not to let it get too wet; if allowed to get too wet it will rot. My plant is in a twelve-inch pot, and I repot it every spring. I would advise E. J. C. to plunge his plant outside, and on no account keep it in the house, as it is very subject to the red spider and mealy bug. I have a plant in the conservatory that is over thirty feet long; it is planted out in a well-prepared border, and it has scrambled up the rafters and is hanging down to the ground, laden with large bunches of fragrant white flowers—it is a splendid specimen, but I would prefer to have it outside, on account of insects. My plant first mentioned promises an abundance of flowers. I have not tried it planted out in the open air, for my potted plant does so fine that I wish for no better. —C. E. P., *Queens, L. I.*

The Ferns referred to, *Pellæa andromædifolia* and *Gymnogramma triangularis*, have both been introduced into cultivation, and, to our knowledge, may be had of J. WARREN MERRILL, Cambridge, Mass., and, very probably,

other extensive Fern-growers have them. *G. chrysophylla* and *G. triangularis* are quite different in appearance. As an ornamental plant, the former would undoubtedly be most admired.

Zinnia Darwini fl. pl., is a hybrid originating in Germany a few years since; our experience in the cultivation of it does not warrant our discarding our old friend, *elegans*, for the new one.

PURPLE FRINGED-ORCHIS.

Early in spring a friend, at Patoka, Ill., sent us what she called a "Great-flowering Orchis," remarking that "they are plenty here." Having potted it and given it the necessary care, about the 10th of July it commenced to bloom, and proved to be *Habenaria peramœna*, an orchidaceus plant, and one of the three native species known by the common name, Purple Fringed-Orchis. It has a closely set flower-spike about six inches in length. The whole plant stood some eighteen inches high, and the general appearance is well shown in the engraving herewith, as is also that of a single

flower, about three-qnarters of the natural size. The beautifully-formed flowers are of a rosy-purple color, and very showy. It is very pleasant to look upon, as its name, *peramœna*, signifies. It proves to be a very beautiful and easily managed pot-plant, and we would advise any of our friends to whom it is accessible, to try it for this purpose. For the wild-garden, in a low spot, it would be a charming plant, and in many parts of the country it is common enough to be obtained with a little effort. We are not aware that it has ever been found just in this section, although its allied species, *H. psycodes* and *H. fimbriata*, are not uncommon here; all of these species are worthy of the fostering care of the cultivator, and we hope that the culture of our native plants will more and more attract the attention and enlist the enthusiasm of plant-lovers.

BUDDING AND GRAFTING.

MR. VICK:—I am delighted with the chapter on grafting and budding given in the MAGAZINE of March, 1878, and yet I wish a little more information about the time of year each different kind should be done. I tried budding Peach trees, but not a bud grew. I want to learn how to graft Apple trees, or bud them, whichever is best, and how and what proportion to mix the wax; what time of year to bud Roses, and what kinds of fruit trees will grow from slips. You speak of some that will. I am as much interested with this subject as with flowers. If I ever learn how to succeed I shall be more thankful than I can tell.—MRS. V. P., *London, Ohio.*

The time for budding stocks depends upon two conditions; there must be a flow of sap in the stock, or, in other words, it should not have fully completed its growth, and the shoot from which the buds are cut should be in a similar condition, but with the buds that are to be used fully developed. A little practice will enable a person to judge very correctly of the state of a stock in reference to budding. In this vicinity, and in ordinary seasons, Plum stocks may be worked from the 5th to the last of July, or perhaps a little later; Cherry stocks from the 15th of July to the 15th of August, Apples and Pears during August, and Peaches through August and into September. Rose stocks are usually budded in July. Budding is mostly performed on young stocks, or those that are not more than a year or two old. Apple trees of any size that require to be worked should be grafted, and millions of Apple trees are raised by grafting one or two year old seedling stocks at the collar—that is, at the union of the stem and the root. A good grafting wax may be made by using one part of beeswax, three parts of tallow and eight parts of rosin, melted together. Instead of tallow, linseed oil may be used, and will be found preferable. A pint of linseed oil is equal to a pound of tallow. Old, or well-worn, thin cotton cloth can be cut, or torn, into narrow strips, about an inch in width, and soaked in the composition, while it is warm, until thoroughly saturated, when it is ready to use in wrapping tightly two or three times about the joint made at grafting. When the heads of large trees are grafted, it is found best to apply the grafting wax with the hands directly to the joint. To prevent its melting by the sun, a small quantity of brick-dust is thoroughly mixed into the composition. Another good composition is this: rosin, two pounds; beeswax, one pound; tallow, one pound. Melt together, pour into a

tub of cold water, and work with the hands till pliable.

In grafting, it is necessary to have sharp tools, so that every cut will be clean and smooth, and the surface of the graft should fit closely at all points to the stock, taking care that the bark of each part joins.

GREEN-FLY ON HONEYSUCKLE.

I venture to send, in the same mail with this, a little box containing a sprig cut from our Coral Honeysuckle, and desire you to tell me, if possible, how to rid it of the insects with which, as you will see from this specimen, it is infested. For several seasons it has been converted by these pests, from a thing of beauty, in which we all delighted, into an object of disgust. If you cannot tell us how to get rid of them, the vine, although a favorite of many years standing, will have to be cut down—a necessity we shall greatly regret.—B. R., *Mount Holly, N. J.*

The insect is the green-fly, and it should not be at all difficult to keep your vine free of it. Weak tobacco-water, applied with a syringe, will quickly rid the plant of the pest. It will be well to take clear water and throw it on forcibly with a syringe, and this will drive off a great many insects; after the plant has been pretty well syringed in this way, use the tobacco water. It may be necessary to repeat the operation in a few days, but if the syringing be faithfully followed up, there is no question who will conquer at last. The tobacco-water must not be strong enough to hurt the foliage, this can be tested by dipping a tender, succulent leaf into the water, if, after a few minutes, it loses its color and becomes brown, the solution is too strong, and must have more water added.

SUMMER TREATMENT OF CYCLAMEN.

JAMES VICK:—I purchased a Cyclamen last fall, and it blossomed all winter, and I left it to dry down, so that I could plunge it in the border, but it threw up new leaves and buds, and has now commenced to blossom again. From what I had read concerning it, I supposed that it only blossomed in winter. Please state in your next number if it is common for it to blossom in the summer, and how I shall treat it to make it blossom again next winter.—E. S., *Leclaire, Iowa.*

Take care of your Cyclamen plant by giving it all the water that it requires, without overwatering it, and encourage it to make as good a growth as possible. Spray the foliage frequently with water, to guard against red spider. Whether it will bloom next winter or not, depends on the health and vigor of the plant.

DUNG BEETLES.

MR. VICK:—Your "May-Bug" in the June number was very instructive, and now will you please tell us further on this subject, whether the white grub found in the manure heap will produce the May-bug? And, if not, why is it said that the white grub is more destructive on ground that has been heavily manured? My opinion is, that the white grub found in the manure is perfectly harmless, and that manure does not tend to the increase of the three-years grub. I think the manure grub is matured in one year. My remedy for grubs in the Strawberries is thorough hoeing, with chicken accompaniment.—G. W., *Rock Falls, Ill.*

The grub found in old manure heaps resembles the grub of the May-beetle, but is not the same. The one most commonly seen in such places is called muck-worm, and differs in some points from the grub of the May-beetle, and is transformed into a dung-beetle, called *Scarabæus relictus*. There are various kinds of dung-beetles, but we now refer to the one so much resembling the May-beetle as to be mistaken for it.

GYPSY CAMP-KETTLES.

Of all the horticultural abominations lately practiced, we think that of placing a gypsy camp-kettle on a fine lawn, in front of a handsome residence, the worst. It is quite as bad as bordering the flower-bed with clam-shells or knuckle-bones. Some of our readers probably have not seen this last effort of art, and we trust they may not. Our illustration is presented, not to be copied, but to give an idea of the absurdity and shocking bad taste of this device. The kettles were first offered for sale for the purpose, all painted up in bright scarlet and trimmed with blue and green, and all the other colors of the rainbow; then some ambitious

one brought out an extra kettle from his range, that had been scrubbed and painted up to vie with his neighbor, and the last stage of the epidemic was reached when the black pots were brought out and chained into position on three rustic cross-sticks. It is strange that people of ordinary good judgment cannot see the incongruity of this false ornament. Here is, perhaps, an elegant house, a well-kept, clean-shaven lawn, handsome trees and shrubs, beautiful flowers and a *potato-pot*.

"In a great house there are not only vessels of gold and of silver, but also of wood and of earth; and some to honor and some to dishonor." Now, we have no right to present these vessels of dishonor, even in attempted disguise, to the admiration of the public. In

their proper place they can serve a useful purpose, nowhere can they be ornamental; they will always suggest their base origin. The whole thing is a travesty on horticultural art, and, we trust, a second sober thought will remove the pots from the lawns to the scullieries. The avidity with which this new idea has been seized upon and put into practice exhibits a commendable zeal in plant culture and garden ornamentation, and this all the more increases our desire to see the efforts of our friends worthy of their cause.

SOME HOUSE PLANTS.

MR. VICK:—1. Can I start Fuchsias from cuttings, the same as Geraniums?

2. Will they do well in the house in summer? I have one that I have been keeping in the house, and it is dropping its leaves; I don't know what to do with it.

3. I have a plant that the florist called a Periwinkle; it is a constant bloomer; the bloom looks like a white Phlox with a pink center. How can I propagate it?

4. Will a Geranium kept in the house in summer bloom the next winter. You will see that I am a novice in regard to house plants, and want to learn.—C. P., *Reelsville, Ind*

1. Fuchsia cuttings will strike as readily as Geraniums.

2. Fuchsias are good summer house-plants; but syringe and spray the foliage daily, to prevent attacks of insects.

3. *Vinca rosea alba*, which your plant is, can be most readily propagated by seed.

4. If your Geranium is well cared for, and is a thrifty plant, it should bloom in winter.

THE ACHIMENES.

MR. VICK: I had a small bulb given me, resembling a Larch cone, and very small. The lady called it Achimenes. I planted it, and after two months waiting, it shows a stalk, and leaves the form of Fuchsia leaves, but thicker, reddish on underside, with green, fuzzy upper side. Will you, or some of your readers, inform me how to treat the plant, and what kind of a flower it has.—MRS. R. S. C., *North Plymouth, Mass.*

The Achimenes is a good summer-flowering bulbous plant, requiring plenty of heat and light, though not a full exposure to the direct rays of the sun. It should receive frequent spraying to prevent the attacks of red spider, to which it is particularly liable. At the close of the season, water is to be withdrawn and the bulbs dried off and kept over winter in a warm, dry place.

GLOXINIAS FROM SEED.

When ought Gloxinias to bloom raised from seed planted in February last? I have had very good success; most people find it difficult to raise them from the seed.—A. J., *Orange, Mass.*

If your plants are kept in good growing condition all summer, so as to produce some strong bulbs, they should be brought into blossom next spring.

PLANTS IN IRON VASES.

MR. VICK:—Do plants do as well in iron vases, when exposed to the full rays of the sun, as they do in terra-cotta or earthen ware? It is said by some that the iron becomes so heated that it injures the roots of the plants. —MRS. M. C. W., *Osborn, Ohio.*

If sufficient water is given to plants in iron vases there is no danger from the heat of the sun—perhaps it is an advantage. Scarcely one person in ten will give vases of plants water enough; instead of watering with a pitcher, give a pailful at a time, gently and slowly showered upon the plants. After the trailing plants in a vase have begun to fall over the sides, they afford a shade from the sun's rays. If there is any doubt about the care that vases will receive in the way of watering, they may be bound about with moss, to destroy the effect of the sun's heat upon their surfaces. As a matter of taste, we prefer terra-cotta ware; but if anything like proper care is used, plants will thrive as well in iron vases as in those of any other material.

BUDDING ROSES.

J. S. W., of Beulah, Tenn., wants to know what time in the year to bud Roses.

The time to bud Roses does not depend so much upon the season of the year as upon the condition of the stocks. A stock, to be in proper condition for budding, should be growing freely, when its bark will part easily from the wood. The shoots from which buds are taken should be in a similar state, and the buds to be employed are those that are plump and well developed; those at the ends of the shoots, being immature, should be rejected.

CANARY BIRDS.

MR. VICK:—I keep and breed Canaries, as I used to in England. I make my own breeding cages, of wood with wire front, and I am pestered with red lice in the cages. I have tried every thing I could think of to rid my cages of them, but without avail. I have no doubt that a very simple remedy might rid me of them if I only knew what it was, and if you can inform me, it will oblige me very much.—J. B., *Decorah, Iowa.*

The Persian Insect Powder, scattered about the cages and blown in, among the feathers of the birds, will destroy the insects, and in no way disturb or annoy the birds.

LIFTING TULIP BULBS.

When should Tulip bulbs be taken from the ground? F. A. B., *Exeter, Neb.*

When the leaves of the Tulips begin to turn yellow, it is evident their annual growth is completed, and they may then be removed from the ground and laid away in a cool, shady and airy place to dry, and there remain until they are again planted in autumn.

HISTORY OF THE TOMATO.

The Mobile, Ala., *Daily Register* appears to have procured facts proving conclusively "that the Tomato was known in the south and west as an article of food a hundred years ago, at least." And the editor says "it was not known as a 'love-apple,' either, but by the name of Tomato." The proof consists of the records of diaries, in which the gathering of Tomatoes is mentioned, and making them into catsup.

The prevalent impression that Tomatoes were not known to be edible more than fifty years ago, is thus accounted for: "Seed of the Tomato, in all probability, got into some region where nobody knew what it was, long after it was well understood at Mobile and Vincennes. The people sowed the seed and saw that the plant produced a beautiful fruit, and so they adopted it for ornamental purposes, not knowing it to be edible; and having no name for it, they, since all things must have a name, called it a 'Love-apple.' Then some writer in the Eastern States, (Mr. BUIST, perhaps,) who had been raised up in this region, wrote it up and gave it notoriety as the 'Love-apple,' and thus the impression of its non-edible character became general, even working its way and taking possession, as a matter of history, in regions where the Tomato had been so long and favorably known as an edible fruit. The Tomato was probably brought here as a garden vegetable by the French at a very early day—it may have flourished in the gardens on Dauphin Island when our capital city was there—quite likely, we think."

THE CANARY FLOWER.

The *California Horticulturist* thus pleasantly describes the graceful and showy appearance of a vine of *Tropæolum peregrinum*: "We sat on the shady porch of a friend's house in Denverton, Solano county, one windy afternoon in May, and saw the long trailers of our hostess' favorite Canary Bird Vine swaying in the breeze, as if to more fully display their bright golden and quaintly-fringed blossoms. Grown from seed that season, it already reached the eaves, and nearly covered the space between two posts of the porch. Hardly any one passed by without admiring it. Each day there were new blossoms, even when one cold and windy night some of the leaves were frost-bitten, and hung limply downward. It is a beautiful vine, although a little tender, in some localities. Next year, when you are ordering seeds, be sure and remember the Canary Bird Vine. It is, let us not neglect to say, a delicate-leaved species of Tropæolum, as any one could guess from the scent of the crushed leaves."

A GOOD EXAMPLE.

A gentleman of Metis, of the Province of Quebec, is doing a good deal of good in a quiet way, in distributing surplus plants among the young people of the neighborhood. From a letter recently received we copy a few lines: "One day five young girls came all together, having walked about three miles. I gave them some of VICK's flower seeds, and my mother and I then filled their baskets with roots, and away they went, laden like bees. Some of my flower roots had extended their conquests too widely for my taste (my garden is a 'pent up Utica'), accordingly I dug up all surperfluous ones and put them together in a waste place, and when applicants come, I take from that stock."

AMERICAN SEEDS AND BULBS IN PERSIA.

MR. VICK:—Your seeds came last spring in good order. I put the Tuberoses in the ground and now they are in bud. One is four feet high and the other, the dwarf, I suppose, is two feet and seven inches. I have sowed my garden seed, and so far it is all doing well. I will have Peas from Vick's Early by June 4th. That is good. Is it not? I fancy seeds are not accustomed to the system of irrigation practiced in this country. The ground is flooded, then the hot sun shines with such power as to bake the earth. I can only succeed with fine seeds, such as Parsnip and Salsify, by using my sprinkling pot quite freely every evening.—
—F. R. O., *Ooromiah, Persia, May* 28, 1879.

CARNATIONS.

Last season, in June, I sowed in a little bed, which I made very fine and mellow, about twenty-five Carnation seeds. It was pretty warm and dry, and so I kept the bed moist by sprinkling it every evening and protecting it from the sun in the middle of the day. In about three weeks I began to see the plants, and they were pretty good before fall. I had eighteen plants. I put them in their place in the garden when they were large enough, and, before winter, covered them with manure and spread a little brush over the tops. Now they are all in bloom, and I have twelve excellent double flowers. I think this pretty good for one paper of seed.—JULIA K.

STRAWBERRIES.—Strawberries that have been layered into pots may be set this month, and will make strong fruiting plants next spring. This delicious and healthful fruit should be raised by every one fortunate enough to live where he can have an ample bed of it; even in the heart of a city it may be raised succesfully in boxes on the tops of the houses.

SPINACH.

This is a crop that the market gardener deems one of much importance, and to which he accordingly gives proper and timely attention, but unfortunately none is more neglected in private gardens, probably for the reason that the time for sowing the seed of Spinach in the fall is when most people consider garden work about closed. Any good garden will raise Spinach, but the best crops are produced on rich soil—the leaves are larger and tenderer than on poorer soils. The ground should be well prepared by plowing or digging, and finely pulverized. The seed is usually sown in rows from twelve to fifteen inches apart and pretty thick in the rows, so that the crop when thinned out will stand even all over the ground, the plants of the prickly variety about five or six inches apart and those of the round sort some eight inches apart in the row. The thinning should commence when the plants have made about four leaves, and they can then be left only an inch or two apart, but, afterwards, successive thinnings should leave the remaining plants at the distances already mentioned. The young plants drawn out can go to the kitchen. In this locality the seed is sown from the 1st to the 10th of September, farther south the time is later in the season.

If it should be dry weather at sowing time, the seeds germinate slowly, and often a crop is lost by this cause; to prevent this issue, some water the seed in the drills before covering, and others, after planting, roll the ground with a heavy roller, or tread along on the rows, so as to compress the soil about the seed, to retain the moisture. If the weather should continue dry for some time after seed-sowing, frequent watering of the ground will be found of great advantage. Weeds should never be allowed to get a foothold in this crop, but frequent hoeings should keep the ground clean and mellow. At the south the plants stand the winter without protection, but in this section a good covering of fallen leaves or straw is necessary to carry them through the winter. It is best to lay brush and poles over the surface first, in order to keep the leaves up, that the air may circulate more or less about the plants; when the covering lies too closely about the plants they "smother" and die off. The covering is removed early in the spring.

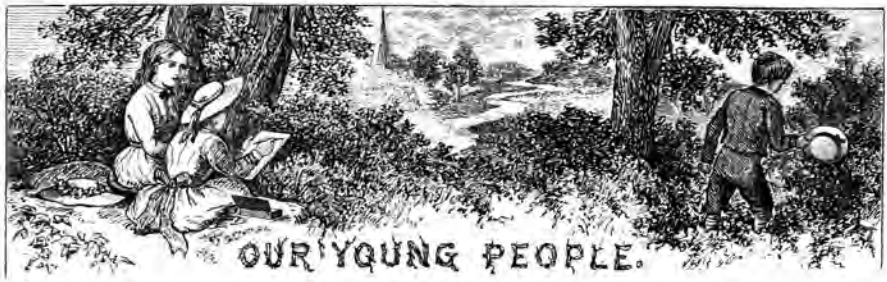
The variety called Prickly, or Prickly-seeded, is considered the hardiest, and, on this account, is frequently used for fall sowing; the Round-leaved is a stronger grower, and in localities not attended with danger from frost, or where the plants can be thoroughly protected, it is the favorite sort. The New Zealand variety is a strong, luxuriant grower, and requires to be planted at greater distances than the other kinds; it stands drouth remarkably well, and, therefore, is adapted to many localities of the southwest. A little attention in the fall to this crop will supply the table in the spring with a healthy and tasteful article of diet, and this is a time when freshly raised vegetables are particularly desired.

A QUICK LAWN.

We have known lots of people to sow Grass seed on a poor, hard soil, or in a dry time, and get nothing but a few weeds. Some, becoming discouraged, give up the job, while others try again, with about the same results. Of course, the seed was bad. Who would blame himself or his own management if any other course were possible? Any ignoramus of a man will blame his wife for the results of his own folly, and any stupid mother will scold or punish the child for what would never have occurred had she exercised ordinary good sense. It is no use to try to start fine Grasses on a hard clay soil that will bake as hard as a brick. If you think the surface a little too hard, cover it with an inch of manure after the seed is sown. Mrs. HAYS, of Bantam, Ohio, sowed, at our suggestion, Lawn Grass last autumn, and wrote us, June 18th, "I do wish you could see my lawn. It is beautiful. Have mowed it once, and it is almost ready to mow again." Any one can get a pretty fair lawn by the 1st of July, by sowing seed on good soil, either in the autumn or very early spring. The autumn is preferable.

CULTURE OF THE WATER LILY.

MR. VICK:—My sister, Mrs. NICHOLLS, having read a description of the method of raising Water Lilies in home-made ponds in your MAGAZINE, proposed to her neighbor, Mrs. BRANTLEY, who devotes great attention to flowers, to have one of your ponds in her flower yard. So, early in March, Mrs. B. sunk a Cypress tub three feet in the ground, filled it one-third with rich loam and mud, brought from the swamp with the Lily, and every morning it is replenished with water. It is a perfect success, the flowers being as large and full as those in the swamps, the leaves larger, with a brighter and glossier green on the surface, and a more brilliant red on the under surface. The color of the Lily is white, with a large, full, round crown. It lasts several days, closing at night, but has no fragrance. If you have never seen this Georgia Swamp Lily, should you desire it, we trio of ladies will send you a root. —MISS KATE C., *Blackshear, Ga.*



BOTANY FOR LITTLE FOLKS.

Fern-hunting in August we have a right to expect to be good. At this season the plants are fully developed, the fronds fully grown, and the fruit-dots on them are in perfection, and whether we want the Ferns for decorative or for scientific purposes, we can now procure them in their finest condition. Instead of taking the same direction and going to the woods, as in the last trip, we will try a new spot—not because we have seen all the different kinds of Ferns to be found there, but because a sort that is not there is to be found in plenty and in perfection on the wooded hill-side I shall show you. It is very interesting to notice the different kinds of homes these plants select. By taking the road and walking a little over a mile south we shall come to a sort of ravine, the bottom of which is traversed by the railroad; we pass over this low place by a bridge in the road, and arriving at the opposite side, find ourselves on the north side of a hill; at the right this hill-side is covered with wood, and as we step into the shade we find about us growing the the Evergreen Shield-Fern, or Holly Fern, *Aspidium acrostichoides*. You will perceive that it requires a dry, or well-drained, though shady, place; usually there is a gravelly subsoil. Our engraving gives a very good idea of the form of the plant; it may almost be said to be prostrate, for the fronds, as they acquire their full size, fall over by their weight, spreading out in all directions from the center. The frond, of which the general form or outline is lanceolate, or lance-shaped, consists of numerous pinnæ, like that shown at *fig.* 13. The pinnæ having the lower edge convex and the upper concave are said to be sword-shaped. You will also notice a little projection, or ear, on the upper edge at the base, and the edge is cut into fine, sharp teeth, each tooth armed with a bristle. The fruit-dots, or sori, are borne in a row along each side of the mid-rib, and a few on the ear, or projection. Only the upper pinnæ are fertile, or those that occupy about one-third of the length of the frond. The frond I now hold in my hand has thirteen pairs of sterile pinnæ and twenty-one of the fertile ones; but the fertile pinnæ are much smaller than the others, and occupy less than half the whole length of the frond. The stipe, or footstalk, is about one-half the length of the leafy portion of the frond, and its lower part is thickly covered with light, chaffy scales. The enlarged fruit-dot shown at *fig.* 13 is seen to have a circular covering, under which are clustered the sporangia, or seed-vessels, or, more properly still, the spore-cases. We have already seen that on the Polypody the sporangia were clustered together in circular groups, but standing naked, or without any covering; that on the Pteris they were ar-

Fig. 12. Aspidium acrostichoides.

ranged in a line along the edges of the frond, and that the reflexed edge itself forms a cover; that on the Adiantum they are situated as nearly similar to those on the Pteris as the difference in the margins of the fronds will admit; in the subject we are now considering we find a new organ has been produced for the special purpose of a covering. This cover is a thin, delicate membrane, and is depressed at the center, apparently as if it had a stalk by which it is attached to the surface of the frond, in the midst of the group of sporangia; it is something like a little open umbrella spread out flat, under which the spore-cases are huddled together as close as they can stand.

There are many species of the genus Aspidi-

um, but all of them have their fruit-dots in circular patches, and these are covered with a case such as we have now described; or the cover-case has an opening, or incision, on one side, which allows it to spread out, making it slightly kidney-shaped, and it is attached either at the central point or along the edge of the opening, while the circumference is free, as shown at *fig.* 14, which is a magnified section of a pinnule of

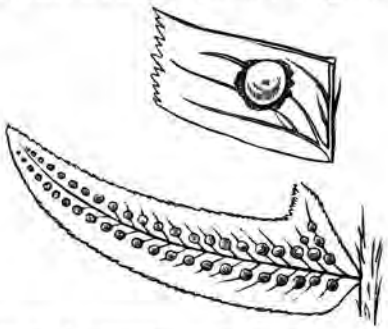


Fig. 13. A. acrostichoides. Fertile Pinnæ and a section with Fruit-dot enlarged.

the Marsh Buckler Fern, *Aspidium Thelypteris.* The sporangia, when young, are completely under the cover, but, as they increase in size, they become too large for it and push themselves out all around, and in some species the circular groups are no longer distinct, but are run together, and the sporangia occupy the entire surface. On the old fronds of the Evergreen Holly Fern it is quite impossible to perceive the circular patches, or fruit-dots, as shown in our engraving, but in young specimens they are well defined and the cover-case is spread entirely over the sporangia. From the description and engravings our readers will, no doubt, be able to readily recognize the Holly Fern.

Fig. 14. A. Thelypteris Fruit-dot.

Plants of this Fern may be removed from the soil where they are growing any time in the autumn, and potted in a good-sized pot, and watered, and, if finely-shaped specimens are selected, they will be handsome plants all winter, as they bear house-treatment remarkably well. The upper surface of the frond is of dark green color, and shining as if varnished, giving the whole plant a very elegant appearance, resembling that of the English Holly. It is this bright, shining surface of the fronds that has given it its common name of Holly Fern.

The name Aspidium is from a Greek word meaning, a shield, on account of the likeness of the cover-case to that ancient implement of defense.

There is a genus of Ferns, the common name of which is Spleenwort, and the scientific name, Asplenium. The species are very numerous,

Fig. 15. Frond of Asplenium Filix-fœmina.

and a number of them are very common and to be found in almost all parts of the country. One of these, and of which we present an engraving of a frond, is *A. Filix-fœmina*, or the Lady Fern. It is a remarkably handsome Fern, and forms a fine clump, with numerous and gracefully bending fronds. The fruit-dots on an Asplenium are quite different in appearance from those on an Aspidium, and which we

Fig. 16. Asplenium. Portion of Pinnæ.

have just considered; instead of being arranged in circular patches they are oblong, usually straight, and lie parallel to each other, as may be seen at *fig.* 16, which represents a part of a pinnæ, with the pinnules about natural size.

The Lady Fern is quite an exception among our native Spleenworts, in having its fruit-dots sometimes kidney-shaped instead of straight; but this peculiarity in form will scarcely be noticed in young fronds, for it is not until they have acquired a little age that the fruit-dots deviate much from a straight line. By reference to *fig.* 16 we perceive that the sporangia are arranged along on the upper side of a vein, and now to correspond to this form of fruit-dot, we find a long, narrow cover-case, which is attached to a vein at one side, with the other side left free like a flap. In the Lady Fern the cover case at one end passes over the vein and becomes fastened for a short distance on the lower side; this gives it the kidney-shape that it has. In all the other Spleenworts growing in this country the cover-case is fastened to the upperside of the vein its entire length, and is quite straight. This peculiarity in the cover-case of the Lady Fern marks it quite distinctly. Unlike the Holly-Fern, which, we have seen, bears its fruit-dots only on the upper portion of the frond, the Lady Fern is fertile on all its parts, and when the sporangia are fully grown they cover the whole surface. The millions of spores that are emitted look like clouds of red dust. The

Fig. 17. Asplenium. Section of Pinnule.

Fig. 18. Scolopendrium vulgare.

Lady Fern is one of the finest native species, and is an admirable subject either for a hardy fernery or as a pot-plant for the house. It is not very particular about soil, but demands a good and constant supply of water at the roots, and a slight shade; when cultivated as a pot-plant it should stand in a saucer of water.

Well-grown specimens of this plant are remarkably beautiful, and their feathery, plume-like fronds are among the most graceful of the Fern tribe. The name, Asplenium, has the same significance as the common name, Spleenwort, on account of the supposed remedial properties of this plant in affections of the spleen. The ancient Greeks recognized one kind of Fern as the male Fern and the other as the female Fern. What they called the male Fern still bears that name with us, and is a species of Aspidium, but it is doubtful if their female Fern was the same as the Lady Fern. It is unnecessary for us to say there is no real meaning attached to these names and that they are entirely fanciful, although it is possible they may have been connected with the plants on account of some superstitious ideas in relation to them. A very rare Fern in this country is the Harts-tongue, or *Scolopendrium*. It is of a very peculiar and distinct appearance, as

Fig. 19. Scolopendrium vulgare. Fruit-dots enlarged.

shown by the engraving, *fig.* 18. Having once seen a picture of it, one could not fail to recognize it when growing; but this privilege a few only of our readers will ever be apt to enjoy, on account of its extreme scarcity. The frond consists of a stipe and an oblong leaf, or blade, from eight to fifteen inches in length. By reference to *fig.* 19, which represents a section of the frond with fruit-dots enlarged, we may perceive a curious modification of the kind of cover-case found in the Asplenium. In that genus we saw the fruit-dots were situated on the upper sides of the veins—that is, between the veins and the mid-rib of the pinnule; in the Hart's-tongue a straight row of sporangia is situated on the upper side of a vein and another row on the under side of the adjoining vein, and a straight cover-case is attached to each vein. The sporangia, as they increase in size, run together and form one mass in a straight line, and appear to have a double cover-case opening along the middle.

The Scolopendrium is not at all difficult to manage as a cultivated plant, but requires good drainage, plenty of water and shade. The loam used for potting, if not from a limestone soil, should have some old mortar mixed with it, as it is a plant that delights in lime. This

Fern has been quite extensively cultivated in Great Britain, and is found to sport into an almost endless number of varieties; many of these varieties are so curious and beautiful they are kept and propagated by division of the root-stocks. These sports are produced from the spores, and we presume a like result would occur in its continued cultivation in this country from our native stock. One remarkable thing about many sports is that they will reproduce themselves almost exactly from their own spores.

We have noticed in the Holly Fern that the upper portion of the fronds bearing the fruit-dots becomes contracted in all its parts, and we will now introduce to you a Fern which shows a similar contraction, only in a far greater degree; this is the Sensitive Fern, *Onoclea sensibilis*, a sterile frond of which is shown at *fig.*

Fig. 20. Onoclea sensibilis. Sterile Frond.

20, and at *fig.* 21 a fertile frond. This fertile frond looks like a stem of round berries or seeds, really it is a frond with its pinnæ divided, and rolled up into little hollow globes with the sporangia covering the inner surface. Fronds are found in all the intermediate states between that of the sterile frond, shown at *fig.* 20, and the fertile, at *fig.* 21. One of the intermediate forms is seen at *fig.* 22, with the pinnæ divided into obtuse, or rounded, lobes. On fronds of this form the fruit-dots frequently appear, and the lobes on which they are situated remain flat. At one time it was supposed this particular form of frond was that of a distinct species, but now it is known to be an intermediate form, as has been stated. In Europe the Onoclea has been much cultivated in hardy ferneries, and is highly prized as a distinct and elegant species. A moist bottom is absolutely essential to the health and thrift of this plant; with this it will stand the full force of the summer sun, and remain perfect through the whole season. The name, Onoclea, signifies a closed vessel, referring to the berry-like rolled-up lobes of the fertile frond.

We have now noticed a few only of our beautiful native Ferns; our principal intention has been to state their characteristic distinctions so that if any of our readers, in their rambles, should gather specimens they might be able to refer some of them to their proper genera, and, perhaps, with the illustrations in mind, to even identify those kinds that have been described. To give only a short description of all of the native species would require a great space, which at present is not at command. The culture of Ferns in this country has scarcely commenced, and our friends are not yet aware in how many ways they may be employed as decorative plants. We are frequently asked what plants will do well in the shade. We would advise a trial of the native Ferns in most such cases, and believe, if well made, it would result in complete satisfaction. In cities, especially in the shade of high buildings, where few other plants do well, Ferns may be employed to the greatest advantage; in these situations they will be sheltered from strong winds and an abundant supply of water is usually present to supply their needs in this particular.

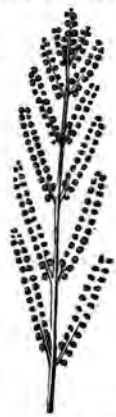


Fig. 21. O. sensibilis. Fertile Frond.

An accurate knowledge of the peculiarities of Ferns is comparatively recent, and before they were well understood many superstitions were connected with them, and of these, prob-

Fig. 22. Intermediate form. O. sensibilis.

ably the one most general and wide-spread was that Fern-seed, or spores, gathered at mid-summer eve rendered the possessor invisible. Many curious practices and customs relating to this class of plants, that were formerly prevalent among both civilized and savage people, and are yet more or less observed, might be related.

FUN AND FRAGRANCE.*

A Brooklyn young lady, of attractive beauty, had a visitor she did not much admire, and some Hyacinth bulbs to which she seemed to be devotedly attached. The former sought her hand, with what success will appear hereafter; the latter were assiduously cared for, and responded in rainbow-tinted petals to her tender training. Her lover had little taste for flowers, he cared more for the roses on the

cheeks of his dulcinea, and the lilies on her neck and brow, and her two-lips, than he did for the red, white, and blue, and variegated Hyacinths in her conservatory.

There was a time within the memory of man when Holland was the capital of bulb-culture. I am not aware that the fact had any influence whatever upon the residents of a certain ward in the City of Churches, where my hero lived. At the time to which reference has been made, hundreds of acres of these sweet and gorgeous flowers were growing in Holland, and, strange as it may appear, it is nevertheless true, that these "fair children of the sun" became such desirable property as to provoke the spirit of speculation and gambling, but never before was a single Hyacinth the subject of a matrimonial engagement, or used as a pledge, or rather, as a conditional promise of marriage. This parti-colored flower, as was JOSEPH, with his coat of many colors, is a favorite with the ladies, and that is not a matter of wonderment, for it is brave enough to show its fair face in the cold and stormy weather of early spring, and the daughters of Eve have always admired heroism and hated cowardice. It is, unlike some gallants we wot of, never afraid to show its colors, and whether the wind blows fair or ill, its flag is lifted above the ground, giving a cheerful aspect to the scene when "winter lingers in the lap of spring."

The young man in question, whose visits became a visitation, besought the lover of flowers, herself the fairest flower, to present to him a Hyacinth bulb, as a token of her affection.

"What will you do with it?" inquired the queen of the little conservatory.

"I will plant it, and care for it, and love it, because of its pleasant associations," said the importunate beau.

"Will this bulb do?" asked the lady, with a comical twinkle in her eyes.

"O, yes!" was the answer.

The white bulb, with its silvery tissue, was wrapped in wool and then carefully folded in sheets of paper and presented to the grateful recipient of the gift. He handled it delicately and carried it safely to his room, where he planted it in a flower pot, and fertilized it with the best material he could procure.

He watched the precious treasure with loving eyes and rosy hopes, for the donor had promised to accept his hand in marriage *soon as the bulb bore a Hyacinth blossom*. But until that time he, the lover, must forego the pleasure of calling to see his human Hyacinth. He had to give his pledge of honor that he would not call to see her until the bulb broke from the mold in radiant beauty. Days, long days, weeks, weary weeks, passed, when, to his delight, he saw a green stem pointing, like a finger, through the rich mold. That green finger suggested a white one, one fit to wear a ring of gold starred with diamonds — an engagement ring, a wedding ring—emblem of eternal love. It pointed to the unclouded sky (so it seemed to him) of con-

nubial felicity; to a bright and happy future, not far in the distance.

The lover in question was a lady-killer; he boasted of his triumphs, and was as proud of the hearts he had slain (?) as an Indian is of the scalps he has taken. But this prospective prize outshone all others. His heart was too full of joyous hope for secret enjoyment; he felt the impulse of communication so strong within him that he sought relief by telling one of his confidential friends of the promised hap-

piness in store for him. This friend had some knowledge of botany, and he was invited to see the germ of the "consummate flower," which was to fill his future with the perfume of love—the promise of the blossom that was to illuminate his life with beauty. No honey-bee ever sought the nectar of a flower with more earnest delight than he sought for the development of the favorite bulb.

Judge his astonishment, disappointment, and indignation when his friend, after a close examination, said:

"This is not a Hyacinth! It looks like an Onion! It smells like an Onion! It tastes like an Onion! It is an Onion!

Thus endeth a true story, and the moral is this: Hyacinth blossoms come only from Hyacinth bulbs.

"Only the actions of the just,
Smell sweet and blossom in the dust."

* This curious story, with its illustrations, was sent to us by one of the best known writers of the day, who vouches for its entire truthfulness

THE SNOWDROP.

Looking forward a few weeks to bulb-planting time we would mention the Snowdrop, not because its friends will be apt to forget it, but because it is one of those favorites we like to praise. In the early spring it is

—"The herald of the flowers,
Sent with its small white flag of truce, to plead
For its beleagured brethren; suppliantly
It prays stern Winter to withdraw his troop
Of winds and blustering storms; and, having won
A smile of promise from its pitying toe,
Returns to tell the issue of its errand
To the expectant host.

Can any flower be more heartily welcome than this brave little herald, even among the

frosts and snows of the early spring! Some of our friends who are just learning to love flowers, are not yet acquainted with this hardy, bulbous plant, although it has long been in cultivation. The name, Snowdrop, is said to be derived from the German *Schneetropfen*, referring, not to a drop of snow, but to the large earrings worn by the ladies of the sixteenth and seventeenth centuries. The French call it *perce-neige*, that is, snow-piercer.

There are both double and single Snowdrops. We always thought the single ones the prettier, but, as tastes differ, some do not agree with us on this point. But, single or double, we advise it to be more generally planted, and it will be abundantly satisfactory.

SEASONABLE MILLINERY.

From the following, from an English source, we learn that our fair cousins across the water do not depend on Paris for their fashions, but have the good taste to practice their own that are adapted to circumstances.

"Paying deference to the aqueous aspects of the season, the ladies have trimmed hats and bonnets—or rather the peculiar combinations in art millinery that do duty for these articles—with moss trimming, and very pretty these decorations look. There is much that is green and suitably cool in the head-gear—there is little that is green, but ofttimes much that is heated in the pretty face beneath. Probably amid the excitement of floral fetes, garden parties, and other gatherings, it is a wise arrangement to deck the little susceptible heads with a cool covering. 'Rolling stones gather no moss,' says the proverb, but mossy hats may gather admirers. May such find in the face nature has given beneath, charms not less pleasing, and modesty as retiring, as are embodied in the lowly, but none the less beautiful, moss."

PUBLICATIONS RECEIVED.

Moore's Rural Life, an Illustrated Journal for Suburban, Village and Country Homes. D. D. T. Moore, Editor. New York: Rural Life Company; $1.50 a year.

The announcement, some months since, that D. D. T. Moore, so well known to the public as the founder and long-time proprietor and publisher of *Moore's Rural New Yorker*, was to commence the publication of a new agricultural and horticultural monthly, was sufficient to awaken and justify anticipations of a journal of intrinsic value and of elegant appearance.

The two numbers—June and July—which have now been issued of *Moore's Rural Life*, have far more than realized all that could have been expected; the matter is excellent and the engravings and typography of the highest order. We give it a hearty welcome and wish it a prosperous career.

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